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ABSTRACT

Information is provided on credit transfer opportunities for graduates from technical and further education (TAFE) middle-level courses in Western Australia who wish to enroll in a bachelor degree course at a state higher education institution. The focus is engineering and visual arts courses. A survey of admission and selection processes for higher education and other factors associated with the transfer process was conducted, as was a survey of employers and employees. Areas for further development of credit transfer provisions were found, including the demand and need for opportunities, as well as changes to existing policies and practices in education and those associated with employment. Recommendations include providing: a public definition of the standing of middle level TAFE qualifications in higher education, databases on the level and character of student movement from TAFE to higher education, standards of performance required in middle level TAFE courses to satisfy institution and course admission requirements, and admission procedures that assess the merit of applicants by relating the performance to objectives and standards of the course for which they apply. Survey questionnaires are appended. A press release provides a kind of "Executive Summary" and has been placed at the front of the publication. (SW)

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A CASE STUDY ON VISUAL ARTS AND ENGINEERING COURSES IN WESTERN AUSTRALIA

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Opportunities for transfer from TAFE to Degree courses

D. LLOYD R. STANDISH

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A CASE STUDY ON VISUAL ARTS AND
ENGINEERING COURSES IN WESTERN AUSTRALIA

Opportunities for transfer from TAFE to Degree courses

3

WESTERN AUSTRALIAN POST SECONDARY EDUCATION COMMISSION

IN 1986 LESS THAN FOUR PERCENT OF THE 11 300 STUDENTS COMMENCING UNDERGRADUATE COURSES IN WESTERN AUSTRALIA GAINED ENTRY ON THE BASIS OF A TAFE QUALIFICATION. NEARLY ALL OF THESE STUDENTS WERE IN FULL TIME EMPLOYMENT SEEKING TO EXTEND THEIR EDUCATION QUALIFICATIONS AND CAREER PROSPECTS. MANY MORE ABLE AND MOTIVATED TAFE GRADUATES WERE UNABLE TO MAKE THE TRANSFER TO HIGHER EDUCATION.

GOVERNMENT POLICY: IMPROVEMENT OF THE WORK FORCE PROFILE

Government policy for post secondary education is now placing much greater emphasis on credit transfer as a means of opening up education opportunities and making more efficient use of education resources.

Credit transfer also provides opportunities for recurrent education and improvement in the education and skills profile of the work force - a major factor in assisting Australia's economic recovery and further development.

THE CASE STUDY

This study focuses on credit transfer opportunities for those graduates from TAFE middle level courses in Western Australia who wish to enrol in a Bachelor degree course at one of the State's higher education institutions.

The study considers the issues involved by looking at engineering and visual arts courses. It is based on a survey of admission and selection processes for higher education, other factors associated with the transfer process and the employment context through a survey of employers and employees.

The Western Australian Post Secondary Education Commission has undertaken this study with financial assistance from the Commonwealth Tertiary Education Commission.

MAJOR FINDINGS FROM THE STUDY

There is considerable scope for further development of credit transfer provisions in terms of the demand and need for opportunities, as well as changes to existing policies and practices in the education system and those associated with employment.

SPECIFIC AREAS FOR CHANGE INCLUDE:

- DEVELOPMENT OF ADMISSIONS POLICIES AND PROCEDURES WHICH PROVIDE FOR MORE EQUITABLE CONSIDERATION OF ABLE TAFE APPLICANTS FOR ADMISSION TO BACHELOR DEGREE COURSES;
- DISSEMINATION OF INFORMATION SETTING OUT THESE ADMISSION AND SELECTION REQUIREMENTS AND STUDY OPPORTUNITIES;
- DEVELOPMENT OF MORE EFFECTIVE CONSULTATION BETWEEN THE TAFE AND HIGHER EDUCATION SECTORS AND INSTITUTIONS, AS WELL AS REPRESENTATIVES OF EMPLOYERS, PROFESSIONAL ORGANIZATIONS AND GOVERNMENT DEPARTMENTS AND AGENCIES WHICH HAVE AN INTEREST IN THE CREDIT TRANSFER PROCESS; AND
- A MORE CONCERTED COMMITMENT IN TERMS OF POLICIES AND SPECIFIC INITIATIVES DESIGNED TO FOSTER THE DEVELOPMENT OF CREDIT TRANSFER.

THE STUDY SHOWS THAT CONCERTED AND SPECIFIC ACTION WILL BE REQUIRED. IT THEREFORE PROPOSES THE ESTABLISHMENT OF SPECIAL HIGHER EDUCATION ADMISSION PROGRAMMES FOR TAFE GRADUATES AS A MECHANISM FOR ACHIEVING IMPROVED CREDIT TRANSFER PROVISIONS.

NEW TAFE GRADUATES ADMISSIONS PROGRAMME IN WA

THE STUDY HAS RESULTED IN THE DEVELOPMENT OF SUCH A PROGRAMME IN WESTERN AUSTRALIA, TO COMMENCE IN 1988. PLANNING FOR THE PROGRAM IS PROCEEDING ON A COOPERATIVE BASIS INVOLVING TAFE, THE HIGHER EDUCATION INSTITUTIONS AND THE WESTERN AUSTRALIAN POST SECONDARY EDUCATION COMMISSION.

STUDY RECOMMENDATIONS

1. CTEC AND STATE EDUCATION COORDINATING AUTHORITIES IN CONSULTATION WITH TAFE AND HIGHER EDUCATION PROVIDERS DEVELOP A COMPREHENSIVE AGENDA FOR IMPROVING PROVISION FOR CROSS SECTOR TRANSFER INCLUDING:
    - PUBLIC DEFINITION OF THE STANDING OF MIDDLE LEVEL TAFE QUALIFICATIONS IN HIGHER EDUCATION;
    - DATA BASES ON STUDENT MOVEMENT;
    - FORMAL PROVISION FOR CONSULTATION BETWEEN TAFE AND HIGHER EDUCATION PROVIDERS ON COURSE DEVELOPMENT AND STUDENT MOVEMENT;

- IMPROVED PATTERN OF COURSE PROVISION FOR RECURRENT EDUCATION; AND
- PILOT PROJECTS FOR THE ADMISSION OF GRADUATES OF MIDDLE LEVEL TAFE COURSES TO PROFESSIONAL DEGREE COURSES.

2. CTEC AND STATE EDUCATION COORDINATING AUTHORITIES DEVELOP DATA BASES ON THE LEVEL AND CHARACTER OF STUDENT MOVEMENT FROM TAFE TO HIGHER EDUCATION TO MONITOR THE EFFECT OF EXISTING AND REVISED CONDITIONS FOR CROSS SECTOR TRANSFER.

3. HIGHER EDUCATION INSTITUTIONS DEFINE THE STANDARD OF PERFORMANCE REQUIRED IN MIDDLE LEVEL TAFE COURSES TO SATISFY INSTITUTION AND COURSE ADMISSION REQUIREMENTS.

4. HIGHER EDUCATION FACULTIES DEVELOP ADMISSION PROCEDURES AND CRITERIA WHICH ASSESS THE MERIT OF APPLICANTS BY RELATING THEIR PERFORMANCE TO THE OBJECTIVES AND ASSESSMENT STANDARDS OF THE COURSE WHICH FORMS THE BASIS OF THEIR APPLICATION.

   EFFECTIVELY THIS MEANS DEFINING STANDARDS OF EQUIVALENT PERFORMANCE FOR MIDDLE LEVEL TAFE COURSES, YEAR 12 SUBJECTS AND MATRICULATION EXAMINATIONS.

5. FOR EACH DEGREE COURSE, FACULTIES DEFINE A SET OF STANDARD EXEMPTIONS FROM COURSE REQUIREMENTS FOR ATTAINMENT OF SPECIFIED STANDARDS OF PERFORMANCE IN MIDDLE LEVEL TAFE COURSES IN THE SAME FIELD OF STUDY.

   THUS THE ABOVE AVERAGE TAFE GRADUATE ADMITTED TO A DEGREE COURSE IN THE SAME FIELD AS THEIR TAFE STUDIES SHOULD RECEIVE FULL CREDIT FOR THE MINIMUM DURATION OF THEIR TAFE COURSE BEYOND THE 12TH YEAR OF FORMAL EDUCATION. FOR EXAMPLE, AN ABOVE AVERAGE GRADUATE FROM A THREE YEAR TAFE DIPLOMA COURSE STIPULATING ENTRY FROM YEAR 10 SHOULD RECEIVE ONE YEARS CREDIT TOWARDS A DEGREE IN THE SAME FIELD OF STUDY.

6. INFORMATION ON THE STANDING OF MIDDLE LEVEL TAFE COURSES IN TERMS OF INSTITUTION ADMISSION REQUIREMENTS, COURSE ADMISSION REQUIREMENTS, SELECTION CRITERIA AND ADVANCED STANDING FOR DEGREE COURSES BE PROVIDED IN HIGHER EDUCATION HANDBOOKS AND COURSE MATERIALS.

   TAFE PROVIDERS INSTITUTE A PROGRAMME TO INFORM STUDENTS IN MIDDLE LEVEL COURSES OF THE ABOVE INFORMATION.

7. CTEC AND STATE EDUCATION COORDINATING AUTHORITIES IN CONSULTATION WITH HIGHER EDUCATION INSTITUTIONS ESTABLISH SPECIAL ADMISSION PROGRAMMES FOR GRADUATES OF MIDDLE LEVEL TAFE COURSES TO DEMONSTRATE THE VIABILITY OF CROSS SECTOR TRANSFER.

8. TAFE AND HIGHER EDUCATION PROVIDERS INSTITUTE RECIPROCAL MEMBERSHIP OF ACADEMIC STAFF ON FACULTY AND COURSE ADVISORY BODIES. FORMAL PROVISION BE MADE FOR CONSULTATION BETWEEN TAFE AND HIGHER EDUCATION PROVIDERS ON COURSE DEVELOPMENT AND STUDENT MOVEMENT.

9. HIGHER EDUCATION INSTITUTIONS EXPLORE THE FEASIBILITY OF OFFERING A WIDER RANGE OF PROFESSIONAL AND VOCATIONAL COURSES OUT OF WORKING HOURS OR IN SANDWICH MODE.

10. CTEC ADDRESS WITH OTHER GOVERNMENT AGENCIES THE PROVISION OF INCENTIVES TO INDIVIDUALS AND ORGANIZATIONS IN INDUSTRY FOR RECURRENT TRAINING AT DEGREE LEVEL.

COPIES OF THE STUDY REPORT

THE REPORT IS BEING DISTRIBUTED TO GOVERNMENT DEPARTMENTS AND AUTHORITIES, REPRESENTATIVE INDUSTRY GROUPS, EDUCATION INSTITUTIONS AND REPRESENTATIVE EDUCATION GROUPS THROUGHOUT AUSTRALIA.

COPIES OF THE REPORT ARE AVAILABLE AT A COST OF $20.00, PLUS POSTAGE AND HANDLING, FROM THE WESTERN AUSTRALIAN POST SECONDARY EDUCATION COMMISSION, PO BOX 135, NEDLANDS WA 6009, TEL 09 389 0200.

OPPORTUNITIES FOR TRANSFER
FROM
TAFE TO DEGREE COURSES:

A Case Study on
Visual Arts and Engineering Courses
in Western Australia

D Lloyd
R Standish

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> Mrs Theresa King who undertook the survey of employers and employees for the study and assisted with the preparation of this report.
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>
> Members of the Academic Committee of the Western Australian Post Secondary Education Commission who acted as the advisory group for the study.
>
> Staff of the Commission's secretariat who assisted in the preparation of the study report.

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REPORT SUMMARY

1. Government policy for post secondary education is now placing much greater emphasis on credit transfer as a means of opening up education opportunities and making more efficient use of education resources. Credit transfer also provides opportunities for recurrent education and improvement in the education and skills profile of the work force - a major factor in assisting Australia's economic recovery and further development.

2. The Western Australian Post Secondary Education Commission has undertaken this study with financial assistance from the Commonwealth Tertiary Education Commission. It focuses on credit transfer opportunities for those graduates from TAFE middle level courses in Western Australia who wish to enrol in a Bachelor degree course at one of the State's higher education institutions. The study concentrates on engineering and visual arts courses. It is based on a survey of the existing situation in terms of admission and selection processes for higher education, other factors associated with the transfer process and the employment context through a survey of employers and employees.

3. The major finding from the study is that there is considerable scope for further development of credit transfer provisions in terms of the demand and need for opportunities, as well as changes to existing policies and practices within the education system and those associated with employment. Specific areas for change include:

   - development of admissions policies and procedures which provide for more equitable consideration of able TAFE applicants for admission to Bachelor degree courses;

   - dissemination of information setting out these admission and selection requirements and study opportunities;

   - development of more effective consultation between the TAFE and higher education sectors and institutions, as well as representatives of employers, professional organizations and Government departments and agencies which have an interest in the credit transfer process; and

   - a more concerted commitment in terms of policies and specific initiatives designed to foster the development of credit transfer.

4. The study shows that concerted and specific action will be required. It therefore proposes the establishment of pilot admission projects for TAFE graduates based in the higher education institutions, with assistance from State post secondary education coordinating authorities and the Commonwealth Tertiary Education Commission, as a mechanism for achieving improved credit transfer provisions.

5. The study has provided a focus for the development of such a pilot programme in Western Australia, to commence in 1988. Planning for the program is proceeding on a cooperative basis involving TAFE, the higher education institutions and the Western Australian Post Secondary Education Commission.

The project makes the following recommendations for change.

1. CTEC and State Coordinating Authorities in consultation with TAFE and higher education providers develop a comprehensive agenda for improving provision for cross sector transfer including:
   - public definition of the standing of middle level TAFE qualifications in higher education;
   - data bases on student movement;
   - formal provision for consultation between TAFE and higher education providers on course development and student movement;
   - improved pattern of course provision for recurrent education; and
   - pilot projects for the admission of graduates of middle level TAFE courses to professional degree courses.

2. CTEC and State Coordinating Authorities develop data bases on the level and character of student movement from TAFE to higher education to monitor the effect of existing and revised conditions for cross sector transfer.

3. Higher education institutions define the standard of performance required in middle level TAFE courses to satisfy institution and course admission requirements.

4. Higher education faculties develop admission procedures and criteria which assess the merit of applicants by relating their performance to the objectives and assessment standards of the course which forms the basis of their application. Effectively this means defining standards of equivalent performance for middle level TAFE courses and year 12 subjects and matriculation examinations.

5. For each degree course, faculties define a set of standard exemptions from course requirements for attainment of specified standards of performance in middle level TAFE courses in the same field of study. The above average TAFE graduate admitted to a degree course in the same field as their TAFE studies should receive full credit for the minimum duration of their TAFE course beyond the 12th year of formal

education. For example an above average graduate from a three year TAFE Diploma course stipulating entry from year 10 should receive one years credit towards a degree in the same field of study.

6. Information on the standing of middle level TAFE courses in terms of institution admission requirements, course admission requirements, selection criteria and advanced standing for degree courses be provided in higher education handbooks and course materials. TAFE providers institute a programme to inform students in middle level courses of the above information.

7. CTEC and State Coordinating Authorities in consultation with higher education institutions establish pilot admission projects in degree programmes for graduates of middle level TAFE courses to demonstrate the viability of cross sector transfer.

8. TAFE and higher education providers institute reciprocal membership of academic staff on faculty and course advisory bodies. Formal provision be made for consultation between TAFE and higher education providers on course development and student movement.

9. Higher education institutions explore the feasibility of offering a wider range of professional and vocational courses out of working hours or in sandwich mode.

10. CTEC address with other Government agencies the provision of incentives to individuals and organizations in industry for recurrent training at degree level.

SECTION 1: INTRODUCTION

Summary

The Report is intended to contribute to an effective and timely response on the part of post secondary education institutions and coordinating authorities to the emergent issue of cross sector transfer between TAFE and higher education. The changing social and financial context of post secondary education has brought the issue of credit transfer into greater prominence in recent years.

Within the broad spectrum of credit transfer the interface between middle level TAFE and higher education degree courses has the most significance in terms of equality of opportunity, recurrent education and the coordination of post secondary education. The project on which the Report is based conducted case studies in the fields of engineering and visual arts to identify factors which inhibited and promoted student movements between sectors. It focused on the recognition given to WA TAFE Diploma qualifications in terms of admission to Bachelor degree courses in WA higher education institutions and exemption from course requirements in the degree programmes. The project found that there was no systematic provision for credit transfer between these award levels and the existing level of student movements was very small.

The project sought information on the potential demand for admission to degree courses among TAFE Diploma graduates, and on the labour market and educational environments for student movement between these award levels. Interviews were conducted with officers and staff of TAFE and higher education providers and with employers and employees in the public and private sectors. The major factors inhibiting the development of cross sector transfer were the absence of public information on the standing of TAFE qualifications in higher education institutions, lack of knowledge among TAFE students of higher education courses, the lack of a comprehensive data base on student movements between TAFE and higher education and limited consultation between TAFE and higher education providers.

The recent literature on credit transfer has consistently identified the implications for efficiency and access of the link between middle level TAFE and higher education degree courses. It has also indicated the difficulty of enhancing coordination at this interface. The literature has indicated a lack of coordinating policy and public information and highlighted the need for the commitment of resources to developing a more favourable environment for cross sector transfer. In line with these trends and following the outcome of the project the Western Australian Post Secondary Education Commission (WAPSEC) with the support of the State's higher education institutions will seek the assistance of CTEC in establishing pilot admission projects in degree courses for graduates of middle level TAFE courses.

Project Background

1.1 As a policy issue of increasing prominence in recent years, credit transfer has been given greater attention by post secondary education coordination authorities. In 1984 the Western Australian Post Secondary Education Commission (WAPSEC) convened a seminar and working party on credit transfer bringing together representatives of all post secondary education providers in WA. This initiative elicited support among institutions, staff and students for the development of credit transfer arrangements. The working party published a report in December 1984 covering a preliminary exploration of the issues identified in discussion.

1.2 The Commission returned to the issue of credit transfer in April 1986 when it submitted a proposal to the Evaluations and Investigations Programme for a project to build on its earlier initiative. The follow up project was to pursue a detailed investigation of the factors determining the environment for credit transfer and the associated level of student movement through case studies proposed in two fields of study. The project commenced in December 1986 and after preliminary study the global focus on credit transfer was refined. The interface between the TAFE and higher education sectors was identified from published studies as the most significant in terms of the coordination of post secondary education, recurrent education and equality of opportunity. The study therefore focused on cross sector transfer between middle level TAFE and higher education degree courses.

1.3 Credit transfer is generally used to refer to the recognition of previous study as a basis for admission to another course. It may also include recognition of previous study as a basis for exemptions from course requirements. In this report the latter practice is referred to as the granting of advanced standing. The term credit transfer is a generic one which refers to the recognition of previous study in another course within the same institution or in another institution. Cross sector transfer is a subset of credit transfer and refers specifically to recognition of study and qualifications gained in another sector of post secondary education. For the purposes of this project, when considering the recognition of middle level TAFE courses, the advanced education and university sectors have been grouped together as the higher education sector. Although there are issues to be resolved in terms of coordination and credit transfer between institutions in the advanced education and university sectors, these are much more amenable to resolution than those concerned with the interface between middle level TAFE and degree courses. The project therefore covers the granting of both admission and advanced standing in degree courses on the basis of middle level TAFE qualifications.

1.4 Up to the present time there has been no systematic provision for cross sector transfer between TAFE and higher education in WA. Students seeking to transfer between the two sectors are dealt with on an ad hoc basis. There are isolated examples where departments in higher education institutions have made some specific provision for students seeking admission on the basis of a middle level TAFE qualification. However, in general there is no coordination or consultation between the TAFE and higher education sectors in terms of cross sector transfer. The project recognizes the difficulties faced by post secondary education institutions in being able to respond as positively as they would wish in making provision for cross sector transfer. They are faced with increasing difficulties in prioritizing competing demands on their finite resources. Cross sector transfer has emerged as an important issue in the changing social context of post secondary education. However, given the nature of post secondary education there is inevitably a response period required for the system to take into account emergent issues such as cross sector transfer. This project is intended to contribute to formulating an effective response on the part of the post secondary education system to the need for closer articulation between TAFE and the higher education sector and institutions.

1.5 The findings of the report are based largely on case studies conducted in two fields of study in Western Australia. Although couched in general terms the conclusions drawn are necessarily tentative when applied outside this ambit. However while specifics may differ the literature on credit transfer suggests that the situation in WA is representative of that to be found in other States.

Project Scope and Objectives

2.1 The long term objective of the project is to promote cross sector transfer as a means of effecting a more efficient use of educational resources, developing a more flexible and skilled workforce and promoting equality of educational opportunity. Educationally this can be translated into the goal of improving admissions procedures and intersector and inter-institution consultation and in promoting the use of pilot admission projects to demonstrate the viability of cross sector transfer. The project has sought to identify constraints faced by higher education and TAFE institutions in defining the standing of middle level TAFE courses. In the labour market the project aimed to investigate the vocational environment in which recurrent education occurs and raise for the attention of public authorities, employers and employees the factors inhibiting the upgrading of skills through cross sector transfer. The implications of cross sector transfer for post secondary education and public policy extend beyond the relatively low level of student movements between TAFE and higher education and these issues have provided a major focus for the project.

2.2 The need to upgrade the skills base of the workforce and to promote equality of opportunity in a constrained socio-economic climate requires that TAFE middle level courses should be recognized as an alternative pathway to enter degree courses. In practice there are significant problems in realizing this goal. Appropriate administrative and academic arrangements need to be put in place to make this a real option for those graduates of middle level TAFE courses with the motivation and ability to enter higher education. They should not be penalized relative to high school leavers in the minimum time taken to graduate with a degree in a similar field to their TAFE course. In higher education institutions this will require:

- recognition of the WA TAFE Certificate award as equivalent to high school matriculation in terms of securing entry to degree courses in similar fields; and
- recognition of a WA TAFE Diploma through appropriate administrative and academic arrangements as conferring at least one year's advanced standing towards a degree in a similar field.

2.3 In terms of the level of student movements, cross sector transfer is not, and will never be, a major characteristic of the current structure of post secondary education. In 1986, students with a TAFE qualification of any sort represented less than four percent of commencing enrolments in undergraduate courses in WA's four higher education institutions (1). This figure is comparable to the national average. Even in a greatly improved environment for cross sector transfer it would be unlikely that student movements from TAFE would constitute more than ten percent of total undergraduate enrolments. While cross sector transfer will never challenge the importance of other sources of applicants for higher education it has major implications for the contribution post secondary education makes to the goals of public policy. Sound provision for cross sector transfer will enhance the flexibility of post secondary education and the workforce and contribute to the maintenance of an acceptable level of equality of opportunity.

2.4 The project has focused on credit transfer between WA TAFE Diploma courses and degree programmes in both sectors of higher education. Educationally and vocationally this is the most significant interface in post secondary education for credit transfer. It has the strongest implications for coordination of resources and programmes between institutions and sectors. In addition it has major implications for recurrent education and upgrading the stock of human capital in the Australian economy.

2.5 WA TAFE Diplomas are usually of three years duration full time and five years part time with the minimum prerequisite of year 10 entry. They are in broad terms equivalent to the Advanced Certificate TAFE courses found in most other States. Unit structures and contact hours vary for each course with the latter generally being 1500 hours or more. An increasing proportion of students, up to forty percent in some courses, are entering these courses after completing year 12 (2). The courses are generally structured in a two tier fashion with students able to take out a WA TAFE Certificate qualification after two years full time study or their part time equivalent, if they so desire. The project does not focus on the first tier of middle level TAFE courses. Although up to a third of TAFE entrants to higher education in WA possess a TAFE Certificate, it was believed that there was a greater probability of a successful outcome if the project focused on the TAFE Diploma as the basis for cross sector transfer. TAFE Certificate courses are included in the scope of the project to the extent that they constitute the first common tier of the TAFE Diploma courses.

2.6 The major provider of TAFE Diploma courses in Western Australia is the Technical Education Division (TED) of the Education Department of Western Australia through its metropolitan and country Colleges of TAFE. TAFE Diploma courses, most of which are identical to the TED courses, are offered by the State's three independent regional colleges at Kalgoorlie, Karratha and Hedland. Because of their congruence, the latter courses are not distinguished in the report from those of the TED. The outcomes of the project will be equally applicable to both TED and independent college TAFE Diploma courses. The TED is moving to progressively restructure its existing Diploma courses to meet Australian Council on Tertiary Awards' (ACTA) requirements for national registration as Associate Diplomas.

2.7 Three of the State's four higher education institutions are included in the case studies conducted by the project; the Western Australian College of Advanced Education (WA College), the Curtin University of Technology (Curtin) formerly the Western Australian Institute of Technology and The University of Western Australia (UWA). Curtin and UWA offer four year Bachelor of Engineering degrees. Curtin also offers a four year Bachelor of Surveying, a three year Bachelor of Cartography and through the Western Australian School of Mines (WASM) at Kalgoorlie, three and four year Bachelor degrees in Mining Engineering, Extractive Metallurgy and Mining Geology. In the visual arts field the WA College offers a three year Bachelor of Arts in fine arts and crafts. Curtin offers the same award in fine arts, crafts and design while UWA offers a fine arts major in its Bachelor of Arts programme. After consultation with officers of the institution it was determined that Murdoch University did not offer a defined sequence of study in either the visual arts or engineering. It was agreed that Murdoch University's programmes fell outside the scope of the case studies, although the general outcomes of the project would apply to all higher education institutions in the State.

2.8 Case studies in the fields of engineering and visual arts were conducted to identify features of the educational and labour market environments which were inhibiting and promoting cross sector transfer. The two fields were chosen to provide two distinct perspectives on the issues involved. Engineering provides vocational education for a number of well defined professional fields. With the exception of design, visual arts education is not vocationally directed or orientated towards a mainstream labour market. Engineering was also selected as a discipline identified by the Commonwealth Tertiary Education Commission as significant to economic development and public policy. Visual Arts was selected, in part, because the Commission's Review of Post Secondary Visual Arts Education in Western Australia drew attention to the high proportion of students in TAFE courses, as opposed to degree programmes, relative to the balance in other states (3). This factor emphasized the importance of cross sector transfer as a means of promoting access to higher education. The engineering case study covered ten TAFE Diploma courses and seven Bachelors degree programmes subsuming a range of courses in particular disciplines. The visual arts study included eleven TAFE Diploma courses and three degree programmes covering a range of specializations in different artistic media.

2.9 TAFE Diploma and Bachelor degree courses serve distinct educational and vocational objectives. The maintenance of the integrity of the objectives of these courses is vital to the balanced provision of post secondary education courses. However, it should be borne in mind that in the workforce the skills and experience of the individual are at least as important to a particular outcome as the level of qualifications held. Provision for cross sector transfer should respect the different educational and vocational purposes of the two award levels without adhering to them slavishly. With this proviso the objective of enhanced cross sector transfer is compatible with the maintenance of the integrity of TAFE Diploma and degree courses.

2.10 The 1987 ACTA Guidelines on the National Registration of Awards illustrate the difference in the orientation of the middle level and degree courses that cross sector transfer seeks to bridge. The Guidelines recognize two types of courses in the Associate Diploma category. The TAFE Diploma courses relevant to the project come under the first category of:

> "Courses which place considerable emphasis on the development of skills or knowledge of a specific area. The course will normally be associated with employment in a designated occupation or vocation, either independently or in support of professional or other paraprofessional staff. It may give eligibility for membership of a paraprofessional association" (4).

The guidelines for Bachelor degree awards emphasize a much broader outlook and a higher level of conceptualization.

> "Courses leading to awards in this category provide students with a systematic and coherent introduction to a body of knowledge, the underlying principles and concepts, and the associated problem solving techniques. Students are expected to develop the academic skills and attitudes needed to comprehend and evaluate new information, concepts and evidence from a range of sources, so that after completion of a degree, they can continue to review, consolidate, extend and apply the knowledge gained in their undergraduate studies.... Many degree courses equip students with the practical skills and techniques needed to apply their knowledge effectively in a professional context" (5).

While it is possible to draw distinctions between awards in terms of educational parameters such distinctions are likely to more difficult to uphold in the workforce. In many situations the experienced paraprofessional with a TAFE Diploma is likely to be more valued by an employer than a new graduate with a Bachelor's degree.

Project Methodology

3.1 The project sought to analyze the total environment for cross sector transfer. Information was sought on three aspects; student demand, policies and procedures in the TAFE and higher education sectors including the need for enhanced cross sector transfer provision, and occupational structures and employment practices in the labour market. Data on student demand for cross sector transfer was drawn from published and unpublished material from the graduate surveys conducted by Bardsley and Gallagher in their project Great Expectations: A Study of Cross Sector Transfer from TAFE to Higher Education in Western Australia. Policies and procedures relevant to cross sector transfer were ascertained from documentation and from interviews with the officers and staff of the Technical Education Division and higher education institutions. Significant characteristics of the relevant labour market were identified from interviews with management personnel and employees at the professional and paraprofessional level in the workforce. On the basis of an interim report prepared from information from these sources representatives of the Technical Education Division and the State's four higher education institutions have agreed on behalf of their institutions to support the Commission's recommendation for pilot admission projects to be conducted in selected fields in 1988.

3.2 The initial submission for funding submitted to the Evaluations and Investigations Committee in April 1986 proposed a methodology based on comparative analysis of middle level TAFE and degree courses followed by consultation between senior academic staff. In the course of the project this schema was revised to focus on the wider environment in which cross sector transfer functions. Information on the pattern of course provision was collated and interviews conducted with the staff of the TED and higher education institutions. However greater emphasis was placed on administrative policies and procedures and occupational structures which set the context of student movement from the TAFE to higher education sectors. The basis of this shift in emphasis was the factor of organizational culture which had not been given sufficient emphasis in the initial submission. It became apparent in the initial stages of the project that there was a considerable amount of preparatory work needed before consultations on the relationship of specific TAFE and higher education courses could be conducted successfully. The policy and administrative frameworks for such consultations between academic staff were lacking or undefined. In the absence of such frameworks the project procedure was modified.

3.3 The first indicator that the overall framework for cross sector transfer was deficient was the lack of statistical data available on students with a TAFE background in higher education. The statistics for 1985-86 collated by Bardsley and Gallagher for their report were useful indicators of the magnitude and pattern of student movement from TAFE to higher education in WA. However, this data was collected by manually tracking over four hundred individually identified students through the records of the Technical Education Division, the Tertiary Institutions Service Centre (the central admissions agency) and the State's four higher education institutions. At present there is no data base capable of providing an accurate general picture of cross sector transfer in WA over time.

3.4 The project was greatly assisted by the availability of published and unpublished material from the surveys of TAFE graduates conducted by Bardsley and Gallagher for their report Great Expectations. The survey material represented the most comprehensive and up to date survey of the higher education aspirations of TAFE graduates in WA. Given the recent nature of the material and its applicability to the project it was believed there was no purpose in duplicating the exercise. In addition to the published material on the overall TAFE graduate cohort the project had access to survey results classified by the field of study of the graduate. This allowed comparisons between the aspirations, motivations and pathways of graduates in engineering, surveying/cartography and visual arts which would not have been possible using the published material (see appendix eight).

3.5 Information on middle level TAFE and higher education degree courses in the fields of engineering and visual arts was obtained from student handbooks, other course materials and interviews with academic staff. The project collected data on course orientation, duration, structure, assessment procedures and entry requirements. Beyond establishing these basic parameters the information sought in interviews emphasized the policies and administrative procedures of institutions and faculties relevant to cross sector transfer and course development. Attention was also given to the decision making processes related to cross sector transfer and to the institution/faculties experience with students with a TAFE background. Twenty two interviews covering around thirty individuals were conducted with officers and staff of the Technical Education Division and higher education institutions.

3.6 The survey of the labour markets in engineering and design covered sixteen organizations in the public and private sectors involving around twenty managerial personnel and a similar number of employees. Contextual information was sought on the nature of the organization, the size of its workforce and the range of skills and professions covered. Detailed information was sought on the occupational structure and promotional pathways of the organization. Policies on recurrent training and recruitment were obtained. This information was related to the pattern of course provision in TAFE and higher education in WA.

3.7 The information gathered from these three sources was compiled as an interim report describing the present state of cross sector transfer and making recommendations for change. This report served as the basis of a meeting between the the Academic Committee of the Commission which acted as the project steering group, and chief executive officers (or their nominees) from the TAFE and higher education sectors. The meeting established a consensus on the nature of the issues involved in provision for cross sector transfer. The Technical Education Division and the State's four higher education institutions gave their support to the Commission's intention to seek CTEC assistance for the establishment of pilot admission projects. It was agreed at the meeting that these projects be set in place to facilitate the enrolment of TAFE graduates in the 1988 academic year in degree courses in higher education institutions.

3.8 Dr William Hall, Managing Director of the TAFE National Centre for Research and Development and Professor Richard Johnson, Special Commissioner of the Commonwealth Tertiary Education Commission acted as corresponding consultants to the project contributing their expertise and national perspective on the issues involved in cross sectoral transfer.

Literature Survey

4.1 The survey was undertaken to provide an overview of the available literature on credit transfer in Australia, particularly that concerned with the interface between TAFE middle level and higher education courses. The main studies considered were:

W.N.Bardsley & A.P.Gallagher, Great Expectations. A Study of Cross-Sectoral Transfer from TAFE to Higher Education in Western Australia. Curtin University of Technology, Western Australia. 1987.

The study is based on survey data and provides a great deal of empirical information about the target population for credit transfer included in the present study.

D. Beswick, H, Schofield, L. Meek and G. Masters, Selective Admissions Under Pressure. An Evaluation and Development Study of Student Selection Procedures at the University of Melbourne. The University of Melbourne, Parkville. 1984.

The study provides a detailed analysis of the admission and selection processes in one institution, including those in the target population for the present study.

Western Australian Post Secondary Education Commission. Report of the Working Party on Credit Transfer. 1984.

The report collates information from TAFE and higher education institution representatives in Western Australia on admission and selection practices and major issues associated with the further development of credit transfer provisions.

Kevin Moriarty, Transfer of Credit in South Australia. Committee of Enquiry into Post Secondary Education in South Australia. Adelaide. 1985.

The report surveys the views of the various parties involved in credit transfer. It highlights many of the constraints in terms of the attitudes and the lack of information within these groups and the inadequate communication between the groups in the context of credit transfer. It also sets out a number of proposals which might be considered in improving credit transfer provisions.

Kevin Parkinson, The Articulation of TAFE Middle Level and Higher Education Courses in Australia. TAFE National Centre for Research and Development. Adelaide. 1985.

The study provides a national survey of admission and credit transfer policies of higher education institutions in Australia. It also includes reference to overseas practices, examines a number of models for enhancing credit transfer and presents recommendations for the development of credit transfer provisions.

Kevin Parkinson, Ron. S. Mitchell and Clare McBeath, Cross Sectoral Transfer from TAFE to Higher Education. TAFE National Centre for Research and Development. Adelaide. 1986.

The study provides a detailed assessment of the factors which inhibit the development of credit transfer provisions and looks at various possibilities for overcoming these difficulties.

Dr John B. Skull, Transfer of Credit between Courses in the Department of Technical and Further Education and Courses in Colleges of Advanced Education in South Australia. Vol 1. Tertiary Education Authority of South Australia. Adelaide. 1982.

The study examined admission and selection policies and practices in South Australia with respect to credit transfer opportunities for graduates of TAFE middle level courses and puts forward a number of recommendations for enhancing credit transfer provisions.

4.2 As maybe seen from the above list, the studies include those which have reviewed admission policies and practices of higher education institutions in Australia, the demand for credit transfer provisions as expressed by TAFE graduates and various measures which might be considered for improving credit transfer opportunities. The studies include those with a national, state and institutional perspective and in some instances incorporate survey information. The survey has focused on the following aspects of credit transfer:

- the need for credit transfer;
- the target population for credit transfer initiatives;
- coordination between education institutions in the context of credit transfer;
- credit transfer in the engineering field; and
- recommended policy initiatives for enhancing credit transfer.

Need for Credit Transfer

4.3 The provision of credit transfer has significant economic, social and educational implications. Parkinson et al (1986) suggests that social and economic inequalities could be largely overcome by improved articulation between education programmes. The under representation of people from lower socio-economic levels who would normally only have limited educational opportunities could be enhanced. Current trends in post secondary education tend to perpetuate the current social stratification in society. Many people who commenced their career at the skilled or paraprofessional level possess the ability, motivation and work experience to advance towards professional and management levels. Parkinson notes that the objections raised by some higher education institutions that TAFE courses provide insufficient preparation for degree studies, or that they are too work oriented, are based on assertion rather than definitive information.

4.4 At a broader level, a report by the Committee of Enquiry into Post Secondary Education in South Australia (1978) looked at the flexibility of credit transfer as a phenomenon of fundamental importance in meeting the needs of a society which retains the socio-economic organization of the past, yet is experiencing rapid technological growth.

4.5 Parkinson (1985) canvasses a range of overseas experiences in relation to credit transfer. He indicates that in 1979 in the United Kingdom, eleven percent of university entrants and twenty percent of polytechnic (broadly equivalent to colleges of advanced education in Australia) entrants were holders of TAFE type middle level qualifications (6). This is a considerably higher figure than occurs in Australia. Generally the system of post school education in the United States is more flexible than those of the United Kingdom or Australia. However there are difficulties in the United States in the articulation of courses at the interface between Community and Senior Colleges which are comparable to those experienced in Australia at the TAFE and higher education level. In the United States, articulation is characterized by both voluntary and legislated provisions. Parkinson indicates that the Australian post secondary education environment is unique and that there can be no simple translation of overseas practices, although useful lessons can be drawn. He goes on to cite the example of the establishment of a national body set up in the United Kingdom to promote transfer. The body had concentrated on providing advice on standard admissions procedures for matriculants rather than fostering credit transfer. As noted earlier, Parkinson et al (1986) recommended investigating the feasibility of establishing a national body for counselling and credit transfer information service, in Australia as a means of promoting credit transfer arrangements.

4.6 Cross sector transfer can improve the efficiency of post secondary education by reducing the duplication of teaching resources which in turn will reduce education costs. Skull (1982) observes "that all courses in tertiary education should be completed in the minimum of time, consistent with the attainment and maintenance of appropriate standards and that disregard of this minimum time factor leads to a waste of time, endeavour, money and human and physical resources" (7). He recommends that articulation between programmes should be facilitated by basing curriculum on recognized vocational needs with maximum credit being granted for previously completed TAFE studies.

Target Population for Credit Transfer

4.7 Proponents of more open access to higher education have suggested that TAFE middle level courses be recognized as an alternative pathway to entry into degree courses. Parkinson et al (1986) for example, advocates less arduous career paths, involving minimum duplication of study with maximum credit and recognition for previously completed studies. An inequitable and quite common situation has been highlighted by Beswick et al (1984). He refers to instances where TAFE qualified applicants are not necessarily granted the academic credit that is justified and to the tendency for staff responsible for admissions to use these applicants to adjust intakes to meet a range of faculty needs. Some admission committees have been noted to be more concerned with admission quotas than the applicants' potential to successfully undertake degree studies.

4.8 It is anticipated that appropriate provision for credit transfer will bring to institutions a body of students with a high level of motivation and maturity. This was borne out in Parkinson et al (1986) in which he indicated that should the higher education institutions formally recognize the achievements of TAFE qualifications, there would be access to a pool of students who would have more than a reasonable chance of success. Generally relevant data has not been available from higher education institutions on the progress of students entering degree programmes on the basis of a TAFE qualification in comparison to other categories of students. There is a clearly a need for institutions to establish monitoring procedures for admission and student progress data. In this regard the follow up work to Bardsley and Gallagher (1987) being undertaken by Bardsley on the success of TAFE graduates in higher education will be of particular interest.

4.9 Although information is scarce, both Parkinson et al (1986) and Beswick (1984) suggest that there are indications that progress of TAFE qualified students in higher education courses appears to be satisfactory. Parkinson goes on to suggest that on the information available TAFE graduates seem to be successful although further investigation is required.

4.10 Parkinson et al (1986) found that the lack of formal and consistent policies, inflexible timetabling, the lack of equitable recognition and the possible need to repeat previous studies were all seen as major hurdles by those TAFE graduates with aspirations to undertake degree studies. Despite these hurdles, there is a sustained interest by graduates from TAFE middle level programmes in making the transfer. From their survey of graduates in Western Australia Bardsley and Gallagher (1987) identified among TAFE graduates "both a high level of interest in pursuing higher education, and for those who make or intend to make the transition, an unacceptably high level of dissatisfaction with the level of recognition given to their TAFE qualifications" (8).

Coordination Between Education Institutions

4.11 Many of the present difficulties relating to credit transfer arise because higher education and TAFE courses are developed and implemented in total isolation from each other. Parkinson et al (1986) showed that there is an apparent lack of interest amongst TAFE institutions in developing policies on cross sectoral transfer. Some institutions see many of their courses as ends in themselves and hence are not, or should not, be structured to facilitate any flow on to higher education courses. There is a dilemma arising out of the need to preserve the integrity of courses at each level, preparing students for specific vocations, while concurrently facilitating transfer for study at a higher level. He noted that existing provision for transfer from TAFE to higher education (with or without credit) varies widely between sectors of tertiary education. Colleges of advanced education generally have a clearer policy on entry, exemption and transfer of credit than the institutes of technology and universities. The latter institutions are also said to be more liberal towards applicants and have a larger range of courses available to TAFE graduates.

4.12 Studies of credit transfer indicate that student movement from TAFE to higher education is not governed by an overall policy. A report of the Working Party on Credit Transfer, WAPSEC (1984) identified lack of information available to students, especially TAFE students, on course requirements and transfer arrangements as being a major impediment to effective transfer. This problem, if it is to be overcome in a systematic way, must involve TAFE and the higher education institutions in preparing and making available appropriate information. To this end it recommended the formation of inter-institutional discipline based working parties to pursue specific arrangements for transfer.

4.13 To date higher education institutions and Commonwealth and State coordinating authorities have made no specific and significant commitment to the provision of enrolment places for credit transfer. Opportunities provided have in the main come in an ad hoc way through established admission and selection processes at the faculty level. There is a need for more formalized consultation, appropriate data collection and development of policies on admission requirements, selection and advanced standing. In line with this Parkinson et al (1986) came to similar conclusions - the need for clearer policies and guidelines on entrance, exemptions and transfer of credit status. The lack of overall policy creates uncertainty, and raises questions of equity in the treatment of TAFE graduates who may lack confidence in negotiations. He contends that a comprehensive and consistent admissions policy should take into account experience, skills, motivation and potential rather than a purely "clinical" checking of subject content.

4.14 Parkinson et al (1986) found that there was a lack of consistent and public policy on credit transfer, making it difficult for TAFE graduates to confidently plan access to higher education. The Report also identified a lack of information on the success of TAFE qualified students who have transferred to higher education institutions with or without a completed TAFE award. He goes on to say that the true extent of the problem of TAFE graduates wishing to transfer is simply not known due to a lack of appropriate data. Currently, the available evidence indicates that few TAFE graduates are availing themselves of the opportunity for transfer. The evidence suggests that it is a lack of information and encouragement, rather than lack of interest on the part of TAFE graduates which is primarily responsible for the present situation.

4.15 Skull (1982) observes that credit transfer is "frequently picked up by institutions, Committees of Enquiry and Standing Committees of Higher Education Boards, only to be dropped (and left in abeyance) as too hot to handle" (9). He cites the chief obstacles to transfer as matters relating to staff status and attitudes and institutional prestige and autonomy. Similarly Beswick et al (1984) found that preference was always given to the HSC (High School Certificate) qualified entrant. The TAFE applicant is ranked with other non-specific groups in a subjective approach by various academic staff members or selection committees who are often unaware of relevant standards and previous course content, but intent on maintaining the faculty quotas and results. Skull (1982) made reference to the fact that TEASA (Tertiary Education Authority of South Australia) had the formal authority to approve and accredit TAFE, as well as advanced education courses, with the capacity to promote articulation between courses. Failure to implement substantive measures is indicative of the strong resistance to credit transfer.

Credit Transfer in Engineering

4.16 Parkinson et al (1986) noted that nationally, engineering was one of three disciplines for which all sectors of higher education granted admission on a limited scale to TAFE qualified applicants. There was a general consensus among institutions that some degree of overlap in terms of TAFE middle level and degree course content does exist in these areas, and although entry and status are not automatic, there are some instances of credit being given for completed TAFE studies.

4.17 In the Parkinson et al (1986) study, the professional engineering organizations contacted were supportive of the principle of cross sector transfer with the proviso that the standard of degree course and hence eligibility for membership to their association, not be compromised. Reference is made to a study pertaining to engineering undertaken in Tasmania by Bayley-Stark. It indicated that the issue of cross sectoral transfer was of little interest to the various industries and public utilities contacted, and it noted that few of the employees with TAFE qualifications expressed any interest in upgrading their qualifications.

4.18 In contrast to this, Bardsley & Gallagher (1987) pointed to a high level of dissatisfaction amongst TAFE graduates in Western Australia with the lack of credit given for TAFE engineering diplomas. This dissatisfaction was reported as being a significant factor inhibiting the transition of more TAFE engineering graduates to higher education. It is of interest to note, that in Moriarty (1978) reference is made to the Institute of Engineers desire to make the technical engineering courses at DFE (Department of Further Education in South Australia) terminal and not transitional to higher education. The Institute proposed that bridging courses be made available to facilitate entry to higher education courses for those with demonstrated ability.

Recommended Policy Initiatives in Credit Transfer

4.19 In considering initiatives directed to promoting credit transfer, the Bardsley and Gallagher report recommends the setting aside of places in higher education for TAFE graduates in related fields of study. This would involve setting down for the information of students explicit statements on admissions policies and selection procedures in higher education, as they apply to TAFE graduates and establishing a formal mechanism for regular review of credit transfer arrangements. Parkinson (1985) recommended an annual joint review of middle level TAFE Certificate courses covering the status accorded to these courses in higher education. It was also recommended that a seminar of representatives from all sectors of post secondary education and from professional associations be convened to consider the articulation of the TAFE and higher education sectors. Skull (1982) was more specific and recommended provision of explicit statements by higher education institutions setting out the maximum and minimum amount of credit to be granted for TAFE qualifications on a subject basis. Work experience was also to be included in the assessment. He further recommended that higher education institutions develop equitable procedures for the selection of mature age entrants, TAFE graduates and matriculants, for admission to those courses which had admission quotas.

4.20 Parkinson (1985) recommends that higher education institutions should make public the process by which TAFE graduates are compared with matriculants for admission purposes. He also recommends that satisfactory completion of TAFE middle level courses should guarantee meeting entrance requirements for relevant higher education courses. In a recent review by Stranks and Watt, Unmet Student Demand in Universities and Colleges of Advanced Education (1986) it was noted that there were approximately 10% more applications for courses in higher education in that year than places available (10). By encouraging TAFE qualified applicants to seek cross sectoral transfer, is this merely compounding the issue? Parkinson et al (1986) says that it is inequitable that TAFE qualified students be placed at a disadvantage in the course of administrative convenience.

4.21 On a national basis Parkinson et al (1986) suggested that the TAFE National Centre for Research and Development investigate the feasibility of establishing an Australian tertiary counselling and credit transfer information service providing details on all tertiary courses and information about credit transfer arrangements with particular reference to TAFE graduates. Moriarty (1978) also referred to the possible need for a central neutral body to advise students on credit transfer options, improve student access to information and create awareness amongst teachers and academics of the actual situation.

4.22 The literature survey has revealed that there are few, if any studies which document and analyze the process by which credit transfer or course articulation provisions are developed and implemented. Most of the studies take an historical or descriptive approach focusing on the desirability of enhanced credit transfer and the factors promoting or retarding its development in general terms. The survey therefore provided both background information and direction for the present study. It also highlighted the need to develop specific pilot programmes as a way of facilitating placement of more TAFE graduates in higher education institutions. This too is focal point of the current WAPSEC study.

References

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2. Personal Communication. Mr Peter Forest, Director Technical Education Division, Education Department of Western Australia.

3. Western Australian Post Secondary Education Commission. The Visual Arts. A Review of Post Secondary Visual Arts Education in Western Australia. Perth. 1985. Table 10, p 34

4. The Australian Council on Tertiary Awards. Guidelines for the National Registration of Awards. Canberra. 1987. p 7

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7. Dr John B. Skull. Transfer of Credit Between Courses in the Department of Technical and Further Education and Courses in Colleges of Advanced Education in South Australia. Vol 1. Middle Level Courses to Degree Courses. Tertiary Education Authority of South Australia. Adelaide. 1982. p 4

8. W.N. Bardsley & A.P. Gallagher. Great Expectations. A Study of Cross - Sectoral Transfer from TAFE to Higher Education in Western Australia. Curtin University of Technology, Western Australia. 1987. p 10

9. Skull. p 1

10. Kevin Parkinson, Ron. S. Mitchell, and Clare McBeath. Cross-Sectoral Transfer From TAFE to Higher Education. TAFE National Centre for Research and Development. Adelaide. 1986. p 196

SECTION 2: NEED AND DEMAND FOR CROSS SECTOR TRANSFER

Summary

Enhanced provision for cross sector transfer contributes to greater flexibility in social equity, the labour market and education by promoting equality of opportunity, upgrading the skills base of the workforce and enhancing the efficiency of post secondary education. An effective system of cross sector transfer is one means by which post secondary education institutions can respond to a climate which is demanding greater efficiency and accountability from higher education in terms of the goals of public policy. For this reason the importance of cross sector transfer cannot be gauged solely in terms of the student numbers involved. The Commonwealth Tertiary Education Commission has given increasing importance to the issue in its planning for the last two triennia and for the first time has recommended that funds be committed to developing a systematic approach to transfer.

Investigation of student demand for cross sector transfer indicates that even under optimum conditions for student movement, TAFE graduates will only constitute a small proportion of commencing undergraduate numbers in higher education institutions. However, the existing level of cross sector transfer between middle level TAFE and degree courses is far short of what is both possible and desirable. In 1986 students holding a TAFE qualification of any kind constituted under four percent of total commencing enrolments in undergraduate courses in WA's four higher education institutions. Such students constitute a small but significant proportion of commencing enrolments in the fields of surveying/cartography and visual arts. In engineering TAFE graduates do not form a significant proportion of enrolments. Course admission requirements and the lack of part time courses in the engineering field in higher education in WA are not conducive to cross sector transfer.

There is a high level of interest in higher education among graduates of TAFE middle level courses. Given this latent demand it is likely that enhanced provision for cross sector transfer in both post secondary education and the labour market will attract a modest but sustained increase in the level of student movement between award levels. A range of factors in post secondary education and the labour market environment contributes to much of the interest in higher education among TAFE graduates remaining latent rather than manifest. The major constraint relates to student perceptions of the low status of TAFE qualifications in higher education and the lack of specific information on the standing accorded to those qualifications in the determination of admissions and advanced standing.

Student Demand for Cross Sector Transfer

5.1 Even under the optimum environment for cross sector transfer the demand for higher education from TAFE graduates would be a small proportion of total demand. This reflects the relatively small number of graduates from TAFE middle level courses in WA. However, the existing level of student movements from the TAFE to higher education sectors is well below what could be achieved under more favourable conditions. The high level of interest in higher education among graduates of middle level TAFE courses suggests that enhanced provision for cross sector transfer would attract a modest, but sustained increase in higher education enrolments from this source. TAFE Diploma graduates will tend to seek admission to higher education to the extent that such studies will enhance their vocational prospects and to the extent that they can be combined with a commitment to employment. Any development of improved provision for transfer needs to be cognizant of this motivation. In the current environment the limitations on student demand for cross sector transfer include student perceptions of unsympathetic admission practices and lack of credit for TAFE qualifications, lack of information on admission procedures and the standing of TAFE qualifications, lack of financial assistance or promotional incentive in industry and lack of appropriate part time and sandwich courses.

5.2 A higher public profile and improved provision for cross sector transfer can be expected to attract a modest but sustained increase in the number of TAFE graduates entering higher education. While difficult to quantify, there is evidence of a level of latent demand for access to higher education among graduates of TAFE middle level courses. Two indicators set the upper and lower limits of any response to improved provision for cross sector transfer. Given the current unfavourable environment for cross sector transfer, the existing level of student movements from TAFE to higher education can be taken as the lower limit of the demand for transfer. The theoretical upper limit consists of all those people who could seek access to higher education on the strength of a middle level TAFE qualification. Given the project's focus the pool of potential higher education applicants has been identified with TAFE Diploma graduates.

Existing Level of Student Movements

5.3 In the 1986 academic year applicants with a TAFE background constituted under four percent of commencing students in undergraduate courses in WA's four higher education institutions. The institutions admitted 11 300 undergraduate students to the 1986 academic year (1). This figure included four hundred and thirty three applicants with a TAFE background who accepted and retained a place (thirty three deferred or withdrew from their studies). Just over one half of these applicants held a TAFE Diploma qualification while around four fifths held either a TAFE Certificate or a Diploma. The remainder held an incomplete TAFE qualification and entered sub-degree courses, mainly at the WA College. Overall eighty four percent enrolled in degree courses. Only one quarter of the successful TAFE applicants held a Certificate or Diploma which had been completed more than two years previously (2).

5.4 Tables One to Three (see pages 29 to 31) compare the total number of students in each degree course with those having a TAFE background. They illustrate the small magnitude of the existing level of student movements from TAFE to higher education. There are gaps in the tables in terms of the fields and faculties covered by the project. However, they represent the best comparative information available. The University of Western Australia is not represented as it does not quantify information on student's educational background which would allow those with TAFE backgrounds to be distinguished from the rest of the student body.

5.5 Given the difficulties attached to being admitted to higher education on the strength of a TAFE qualification it can be assumed that the existing level of student movement represents close to the minimum level of the demand for transfer. In all of the faculties canvassed by the project the absolute number of existing student movements from TAFE to higher education is small. In 1985 and 1986 there were one and four students from TAFE commencing in the Curtin Bachelor of Engineering course. Between nine and sixteen TAFE students commenced in each of the visual arts courses at Curtin and the WA College in the same years. The small numbers make it more likely that the educational careers and personal motivations of TAFE graduates who have entered higher education are atypical of students in either the TAFE or higher education sectors. In the smaller, non-engineering, departments TAFE graduates can represent a diminutive but significant proportion of admissions. In 1985 and 1986 they constituted thirteen and twenty four percent of commencing students in the Curtin surveying/cartography course and from nine to seventeen percent in the Curtin and WA College visual arts courses. In the large engineering faculties, at around one percent of commencing enrolments, TAFE graduates constitute examples of personal idiosyncrasy or educational curiosity rather than an identifiable student cohort.

Potential Demand for Cross Sector Transfer

5.6 Even at its maximum extent cross sector transfer will only be a small part of the total admissions process. In 1985 in WA seven hundred and sixty three people graduated with a TAFE Diploma (3). This represents the maximum annual addition to the pool of people who might seek entry to higher education on the strength of this qualification. Compared to the 11 300 students admitted to undergraduate courses in WA higher education institutions in 1986 this is not a large figure. The situation is comparable in each of the fields covered by the project. Table Four (see page 32) gives the number of students per annum who have graduated with a TAFE Diploma from courses in the fields of engineering, surveying/cartography and visual arts.

5.7 Given the range of motivations of those who complete a TAFE Diploma, it can be assumed that only a proportion of the total cohort would have an interest in, or seek to enter, higher education. The academic inclination and skills required in higher education would also limit potential applicants to a subset of the total TAFE Diploma cohort. Of the 1985 TAFE Diploma cohort mentioned above at least seventy seven or ten percent sought admission to higher education to study in the 1986 academic year (4). Within the remaining six hundred and eighty six graduates are the cohort whose interest in higher education is latent rather than manifest and who constitute the untapped or discouraged demand for higher education. Bardsley and Gallagher conducted a survey of this group to ascertain the level of interest in higher education. Within the limitations of such exercises the survey adduced a high level of interest in, and latent demand for, higher education, among TAFE Diploma graduates. Of the respondents thirty three percent indicated they would apply to enter higher education in the next two to three years, forty seven percent stated they were unsure and twenty seven percent indicated they would not apply (5). In answering the question why they had not applied to enter higher education only thirteen percent of the respondents indicated that they had no further interest in study (6). The remainder cited reasons such as career, family or financial commitments. The rates of response were comparable in each of the three fields covered by the project. Around three quarters of graduates in engineering, surveying/cartography and visual arts indicated they thought they would cope well with higher education. Only ten percent or less felt they would cope poorly (7).

5.8 The extent to which this latent demand is translated into manifest demand is linked to how higher education fits with the motivations and life patterns of TAFE Diploma graduates. Responses to the Bardsley and Gallagher survey indicate, that as a cohort, graduates are highly motivated by vocational considerations. Around sixty percent decided to do their TAFE Diploma for reasons related to work and career while twenty eight percent took the course for personal interest (8). Nearly three quarters listed getting a job or improved career prospects as a benefit of completing their diploma (9). Of those who indicated they would apply to enter higher education in the next two or three years sixty percent cited improved vocational prospects as an anticipated benefit of a higher education while thirty two percent listed intrinsic or personal benefits such as the acquisition of new knowledge (10). Graduates in engineering and surveying/cartography tended to be even more concerned with vocational outcomes. Graduates in the visual arts field were much more concerned with personal outcomes and generally reversed the weightings given to vocational and personal motivations by the total cohort. These characteristics are illustrated by the fact that one hundred percent of surveying/cartography respondents and around eighty five percent of engineering respondents indicated they had full time jobs related to their TAFE Diploma. The figure for respondents with a Diploma in the visual arts was only thirty two percent (11). Of those TAFE graduates admitted to higher education in 1986 seventy eight percent had full or part time work (12). It is reasonable to assume that, with the exception of the visual arts field, TAFE Diploma graduates will tend to seek admission to higher education to the extent that such studies will enhance their vocational prospects and to the extent that they can be combined with a commitment to employment.

5.9 Improved provision for student movement from the TAFE to higher education sector may raise the concern that cross sector transfer could become an easy "backdoor" into higher education and that the specific educational purpose of TAFE courses might be jeopardized. Information from the Bardsley and Gallagher survey on the educational pathways followed by TAFE Diploma graduates suggests that this concern is not justified. Only around one in six of the total cohort decided to do a TAFE Diploma, at or immediately after, their secondary schooling. Slightly over a half opted to do the Diploma during work and a quarter after previous study at TAFE (13). Surveying/Cartography graduates were exceptional in this sense with over half deciding to take up their course at or immediately after school and only ten percent deciding to do so during work (14). This does not suggest a threat to the educational integrity of TAFE courses or a concern to take a "fast" route to higher education. It should also be noted, as mentioned earlier in the report that students who have completed year 12 secondary education constitute an increasing proportion of middle level TAFE course enrolments.

5.10 Further information on the populations of TAFE Diplomates (and Certificate holders) was obtained in the latter stages of the project from the report by Davenport and Nicholson Graduate Destinations Survey 1986-87. This is a report of the survey conducted by the TAFE Counselling Service into the destinations of 1985 TAFE Certificate and Diploma graduates from the Technical Education Division of the Education Ministry of Western Australia. Although time was not available to pursue detailed unpublished data for engineering and visual arts courses, the reported results from the survey confirm the findings of Bardsley and Gallagher. In particular the report highlights:

- the large proportion of TAFE graduates (over sixty percent) who entered their course with more than the minimum year 10 entry requirement;
- the high proportion of TAFE graduates (fifty seven percent) employed in a job related to their course six months after graduation; and
- the significant motivation towards further study amongst employed TAFE graduates, mostly taken up through TAFE Diplomas with very few enrolled in Bachelor degree courses (15).

Limitations on Demand for Cross Sector Transfer

5.11 The above indications suggest that there is a significant margin of latent demand for higher education among TAFE Diploma graduates. What factors contribute to this demand remaining latent rather than becoming manifest? The limitations on student demand for cross sector transfer include:

- lack of appropriate part time and sandwich courses;
- lack of exemptions in degree courses for previous study in middle level TAFE courses;
- student perceptions of unsympathetic admission practices;
- lack of information on admission procedures and the standing of TAFE qualifications; and
- lack of financial assistance or promotional incentive in industry.

5.12 Lack of credit for previous study and lack of evening and sandwich courses lengthen the time taken to complete a degree while in employment. They represent a significant limitation on the demand for higher education among TAFE graduates. In engineering the degree courses are four years full time or equivalent, if no credit is given for previous study. This length of time, especially if extended by part time study, limits the number of TAFE students seeking to enter the courses. The fact that the UWA Bachelor of Engineering course is only available on a full time basis excludes the ninety three percent of TAFE Engineering Diploma graduates who responded to the Bardsley and Gallagher survey indicating they were working full time (16). Similarly, the Curtin Bachelor of Engineering course, although available part time, cannot be undertaken in the evening beyond the first year. The project found very few examples of industry offering TAFE graduates financial support or promotional incentives to upgrade their qualifications to degree level. Public authorities will give workers five hours study leave a week if the employee matches this commitment in his or her private time. This issue is discussed in Chapter Eight.

5.13 The Bardsley and Gallagher survey produced some indications of discouraged demand for higher education in that seven percent of respondents stated that the reason for not applying to enter higher education was the lack of credit given to their TAFE Diploma (17). Among engineering graduates this response rate increased to twenty percent indicating that current practices constitute a significant obstacle to student aspirations in this field (18). The qualitative evidence adduced by the project in interviews with academic staff and institutional officers suggests that the seven percent response rate from the total cohort represents the minimum level of discouraged demand. It was suggested that TAFE students perceive some institutions and faculties as closed to them and therefore very few apply for admission. This situation is compounded in professional courses where there is a high demand for places from school leavers. Of the four hundred and sixty six applicants with a TAFE background offered places in undergraduate courses in the 1986 academic year two hundred and thirty eight received an offer from the WA College, ninety eight from Curtin, eighty eight from Murdoch and only four from The University of Western Australia (19). The engineering faculties at UWA and Curtin enroll few TAFE graduates. Although these factors are not readily quantifiable it seems reasonable to assume that they have played a part in discouraging applications for admission.

5.14 There is a dearth of information available to TAFE students on the standing of their qualifications in higher education institutions and on admissions procedures applicable to cross sector transfer. In engineering and visual arts the project did not encounter an example of a list of standard credits for previous study in TAFE courses that was freely available to students. There was also a lack of information on admissions procedures and selection criteria applicable to TAFE qualifications. The lack of such information has not deterred the small handful of highly motivated students with a TAFE background who have sought and gained admission to higher education. However it can be surmised that for the general student population in TAFE the lack of relevant information does not encourage their interest in seeking admission to higher education. In addition, lack of information on the standing of middle level TAFE qualifications in terms of the admissions process makes it difficult to confidently plan access to higher education. It is unlikely that school leavers would be expected to negotiate the admissions process with a similar lack of necessary information. Bardsley and Gallagher have reported that thirteen percent of TAFE diploma graduates responding to their survey stated that lack of information on courses and admission procedures dissuaded them from applying to enter higher education (20).

5.15 There is also room to believe that TAFE institutions and staff could do more to make those students with the ability and inclination to study at degree level aware of the options available to them. This is not to deny the support which is currently provided by staff and officers of TAFE to students seeking to enter higher education institutions. Instances were cited in the engineering field where TAFE staff had successfully acted as advocates for outstanding students seeking admission to degree programmes. However, there is no concerted programme in TAFE to inform students of the options open to them in terms of higher education courses or admissions procedures. This lack is reflected quantitatively in the outcome of the Bardsley and Gallagher survey. When asked to respond on a five point continuum to a question asking what support they had received from TAFE staff to seek entry to higher education only around thirty five percent of engineering graduates and twenty five percent of surveying/cartography and visual arts graduates indicated they had received some sort of encouragement from TAFE staff in their aspirations to enter higher education (21).

Table 1: 1985 Enrolments in Visual Arts and Engineering Bachelor Degree Courses at Curtin University of Technology

Course	Enrolments					
	Commencing			Total		
	Total	TAFE	(%)	Total	TAFE	(%)
Engineering Common 1st Yr	219	4	(2)	272	6	(2)
Construction Engineering *	1	0		26	0	
Civil Engineering *	1	0		112	2	(2)
Chemical Engineering *	2	0		11	0	
Electronic Engineering *	1	0		153	1	(1)
Communications Engineering *	2	0		46	0	
Electrical Engineering *	0	0		45	1	(2)
Mechanical Engineering *	1	0		142	1	(1)
Total Engineering	227	4	(2)	807	11	(1)
Surveying & Mapping	37	5	(13)	132	12	(9)
Mining Eng (B.App.Sc & B.Eng)	22	1	(4)	88	1	(1)
Mining Geol (B.App.Sc & B.Eng)	16	3	(19)	25	3	(12)
Metallurgy (B.App.Sc & B.Eng)	7	0		23	0	
Common 1st yr (B.Eng)	18	0		18	1	(5)
Total Mining	63	4	(6)	154	5	(3)
Design	37	2	(5)	117	10	(9)
Crafts	23	2	(9)	83	11	(13)
Fine Arts	35	5	(14)	112	10	(9)
Total Visual Arts	95	9	(9)	312	31	(10)

* Lists commencing students new to the engineering programme, not all students moving through from the common first year.

1. The TAFE category may include students with other than middle level qualifications and those with qualifications in fields unrelated to the degree course.

2. The TAFE category may omit students with TAFE qualifications who were admitted on the basis of TEE (Tertiary Entrance Examinations) results.

Source: Curtin University Statistician's Office (24/3/87 & 1/7/87))

Table 2: 1986 Enrolments in Visual Arts and Engineering Bachelor Degree Courses at Curtin University of Technology

Course	Enrolments					
	Commencing			Total		
	Total	TAFE	(%)	Total	TAFE	(%)
Engineering Common 1st Yr	202	1	(.5)	267	2	(1)
Construction Engineering *				19	0	
Civil Engineering *				102	3	(3)
Chemical Engineering *				50	0	
Electronic Engineering *	3	0		153	2	(1)
Communications Engineering *				39	0	
Electrical Engineering *	1	0		40	2	(5)
Mechanical Engineering *				128	4	(4)
Total Engineering	206	1	(.5)	798	13	(2)
Surveying & Mapping	5	3	(60)	103	25	(24)
Surveying #	31	5	(16)	31	5	(16)
Cartography #	5	3	(60)	5	3	(60)
Total Surveying/Cartography	41	11	(24)	139	33	(24)
Mining Eng (B.App.Sc & B.Eng)	36	0		90	2	(2)
Mining Geol (B.App.Sc)	7	0		20	2	(10)
Metallurgy (B.App.Sc & B.Eng)	12	0		26	0	
Common 1st yr (B.Eng)	18	0		18	1	(5)
Total Mining	73	0	(0)	144	5	(3)
Design	48	2	(4)	124	6	(5)
Crafts	32	2	(6)	92	10	(11)
Fine Arts	42	2	(5)	109	10	(9)
Total Visual Arts	122	6	(5)	325	26	(8)

* Lists commencing students new to the engineering programme, not all students moving through from the common first year.

# New course introduced in 1986 (hence figures for commencing and total enrolments the same).

1. The TAFE category may include students with other than middle level qualifications and those with qualifications in fields unrelated to the degree course.
2. The TAFE category may omit students with TAFE qualifications who were admitted on the basis of TEE (Tertiary Entrance Examination) results.

Source: Curtin University Statistician's Office (24/3/87 & 1/7/87))

Table 3: 1986 Enrolments in Visual Arts at the WA College (Associate Diploma and Bachelor's Degree)

Field	Commencing Total	TAFE	(%)
Calligraphy	10	1	(10)
Ceramics	12	1	(8)
Painting	40	8	(20)
Printmaking	11	4	(36)
Textiles	19	2	(9)
Miscellaneous	1	0	
Total Visual Arts	**93**	**16**	**(17)**

1. As the course commenced in 1986 the figures for commencing and total enrolments are the same.

2. The TAFE category may include students with other than middle level qualifications and those with qualifications in fields unrelated to the degree course.

3. The TAFE category may omit students with TAFE qualifications who were admitted on the basis of TEE (Tertiary Entrance Examinations) results.

Source: College Registrar's Office

Table 4: Graduates of WA Technical Education Division TAFE Diploma Courses 1981 - 1987

Course				Year			
	1981	1982	1983	1984	1985	1986	1987
Civil Engineering	21	25	22	30	31	24	18
Electrical Engineering	4	7	8	5	15	11	5
Electronic Engineering	37	29	27	38	47	35	31
Mechanical Engineering	25	30	17	12	21	29	14
Production/Manuf. Engineering	2	4	1		2	2	
Total Engineering	**89**	**95**	**75**	**85**	**116**	**101**	**68**
Metallurgy		2	5		1		
Surface Mining	1	1	2	1	3		1
Electrical Draftsmanship					2	3	1
Surveying	6	6	14	5	19	17	19
Cartography	8	5	13	14	18	27	15
Total Surveying/Cartography	**14**	**11**	**27**	**19**	**37**	**44**	**34**
Art Studies	34	37	49	40	40	51	68
Fine Art (Painting)	19	20	19	11	13	18	12
Fine Art (Sculpture)		12	12	1	7	8	15
Graphic Design	19	26	32	35	25	26	30
Interior Design	5	9	4	10	13	6	11
Theatre Arts and Design	5	10	15	17	15	14	11
Printmaking	2	1	1	2	7	3	2
Studio Ceramics							2
Photography	9	5	8	5	24	8	
Photography (Audio Visual)						3	5
Photography (Illustrative)						2	2
Total Visual Arts	**93**	**120**	**140**	**121**	**144**	**139**	**156**

Source: Technical Education Division Statistics Office

The Need for Cross Sector Transfer

6.1 The need for cross sector transfer between middle level TAFE and degree courses can be identified on educational, economic and social grounds. The benefits sought from provision for transfer include greater flexibility in all three areas and improved articulation of social institutions. Cross sector transfer is a means of redressing inflexibility arising from the pattern of social institutions in Australian society. These inflexibilities carry a range of diffuse but significant social and economic costs. Organizations such as the Economic Planning Advisory Council (EPAC) have highlighted the economic costs associated with the rigidity of the labour market and the lack of recurrent training for the workforce in terms of Australia's economic development (22). It is to be expected that there are also costs consequent upon rigidity in post secondary education and social and vocational mobility. Structural change in the economy, increasing stringency in public finance and declining living standards are increasingly likely to highlight these costs.

6.2 Provision for cross sector transfer can increase the efficiency of the post secondary education system in terms of the use of resources and give the system a greater capability to respond to the future level of student aspirations. In the short term effective transfer measures reduce the duplication of teaching resources involved when students repeat studies in which they are already competent. However, as the existing level of cross sector transfer is such a small proportion of total student movements, such short term savings are not particularly significant. In the longer term, new patterns of course development such as two tier courses between the TAFE and higher education sectors promise greater efficiency and effectiveness in the use of resources. More importantly cross sector transfer is a means of meeting the increasing demands for access to higher education in a stringent financial climate.

6.3 Public policy is directed to bringing the participation rate in the Australian post secondary education system closer to the levels of our OECD trading partners. Higher education institutions will be facing a rising level of aspirations in the community. Rising upper secondary school retention rates are increasing the number of students who are qualified to seek admission to higher education either on leaving school or at any point in their careers. In addition to this, a growing number of students choose to undertake middle level TAFE courses after completing year 12. Demand from the first source is likely to result in increasing pressure to utilize resources in the TAFE sector to meet these aspirations and require closer articulation of the sectors. Aspirations for higher education from the second source are likely to lead directly to pressure for improved transfer arrangements and clarification of the standing of TAFE qualifications in higher education. Effective provision for transfer will put in place a framework that will allow post secondary education to respond as equitably and effectively as possible to these pressures.

6.4 Analyses by the Economic Planning Advisory Council (EPAC) and other public agencies have identified significant deficiencies in the Australian workforce relative to our OECD trading partners. The

Australian workforce is less flexible, has a narrower skills base and lacks skills in specific areas such as management, engineering and science. In the medium term recurrent training is the most significant means of redressing these deficiencies. Cross sector transfer from middle level TAFE to degree courses provides an educational pathway from the paraprofessional to the professional workforce. The labour market survey conducted in the course of the project pointed to a significant demarcation between these levels in the engineering field. This rigidity represents a loss of potential skills and expertise to the workforce in that highly motivated and experienced sections of the workforce are being restricted to paraprofessional positions. Cross sector transfer is a means of realizing this potential increase in the stock of human capital.

6.5 In a climate of stable or declining living standards and pressure on existing channels of social mobility cross sector transfer is a means of furthering equality of opportunity. One of the values ascribed to post secondary education by the community is that it serves as a ladder of opportunity, a source of upward vocational and social mobility. The current poor provision for cross sector transfer is a less well publicized addition to the more widely canvassed qualifications to this perspective. At present the ladder of opportunity provided by post secondary education has a couple of rungs missing. Although of relatively small significance in terms of student movements, cross sector transfer has an important role in providing access to a Bachelor degree qualification for sections of the community for whom such a choice would otherwise be difficult or impossible to exercise. A particularly important population are those who live in regional centres who have few options in accessing higher education.

6.6 The development of cross sector transfer has gained an increasing momentum in the policies of the Commonwealth Tertiary Education Commission (CTEC). Planning for the 1985-87 triennium saw the expansion of credit transfer arrangements in post secondary education emerge as an important issue. In CTEC's Recommendations for 1986 the Commission commented that while it could not impose cross crediting on institutions, it believed they should be more liberal in giving credit to students who transferred from another institution (23). The TAFE Council was particularly concerned that TAFE graduates were not being granted sufficient opportunities to transfer with credit to higher education institution. It suggested the negotiation of articulation agreements between TAFE systems and higher education institutions be developed, initially in the areas of Business and Engineering (24). However, no specific programme was implemented to improve transfer arrangements.

6.7 Planning in the 1988-90 triennium has seen credit transfer continue as an important issue. All three Advisory Councils in their reports to CTEC recognized that some progress had been made, but advocated further action be taken to extend credit transfer arrangements. In Volume One of the Report for the 1988-90 Triennium the Commission has adopted its most definite stance to date on the issue of credit transfer. Its statement on academic credit concludes with the following policy statements and recommendations to the Commonwealth Government.

> "... it (the Commission) believes that action must be progressed with the object of having functional credit transfer guidelines operational before the end of the 1988-90 triennium, together with associated data bases and with provision for linkage between State data bases assured. The Commission believes that the matter is so important that it should be considered as a major national issue by the Australian Education Council. This would ensure the involvement of all States and all sectors of tertiary education. In the Commission's view a set of empirical guidelines developed over time is not a sufficient response to the immediate need for action in relation to credit transfer" (25).

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SECTION 3: ENVIRONMENT FOR CROSS SECTOR TRANSFER

Summary

In the fields of visual arts and engineering increased levels of student movement between TAFE and higher education are dependent on changes in the organizational culture of post secondary education and the labour market. There is a firm demarcation in the labour market between the paraprofessional and professional levels which parallels the demarcation between the TAFE and higher education sectors. In the workforce occupational structures, employment practices and lack of financial assistance are disincentives for individuals to upgrade their TAFE qualifications to degree level. In post secondary education a focus on academic status has prejudiced the standing of TAFE qualifications in higher education and created difficulties for TAFE graduates seeking admission. Effective provision for cross sector transfer requires shifts in the perceptions and practices of employers, employees, professional associations and educators.

The educational environment for cross sector transfer in visual arts and engineering is characterized by a lack of consultation between TAFE and higher education and the low status accorded to TAFE qualifications in higher education. There is limited accountability in either TAFE or higher education for decisions taken which affect transfer between sectors. The lack of frameworks to equitably compare applicants of different educational backgrounds in faculty/department selection processes and the lack of public information on the standing of TAFE qualifications are the major constraints on cross sector transfer. These factors can only be effectively addressed through greater consultation between sectors and through commitment of resources for measures to improve the coordination of post secondary education and introduction of specific credit transfer initiatives.

A survey conducted of employers and employees in the public and private sectors as part of the project indicated that lack of promotional pathways from paraprofessional to professional level and existing recruitment practices are major constraints on the demand for cross sector transfer. In the engineering field the lack of part time evening and sandwich courses and the minimal amount of advanced standing granted means that it takes an inordinate length of time to complete a degree while in the workforce. Thus only the atypical and highly motivated individual makes the transition from the paraprofessional to professional level through extension from a middle level TAFE qualification to a Bachelors degree. Professional associations generally reflect and sustain the hierarchy of professional and paraprofessional occupational levels. A significantly higher level of student movement between sectors is in part dependent on the provision of promotional and financial incentives for employees in industry and the public sector. Without such incentives student demand for cross sector transfer will continue to be constrained, particularly in the engineering field, and will frustrate any attempt to lift the level of student movement between sectors through enhanced educational provision. Most significantly effective change requires a higher level of awareness of the importance of cross sector transfer.

Educational Environment for Cross Sector Transfer

7.1 There is a range of attitudinal and administrative constraints in TAFE and higher education institutions on the development of cross sector transfer. These constraints are not unconnected phenomena but the product of the organizational culture of post secondary education as a whole. The environment for cross sector transfer is affected by admissions practices, the determination of advanced standing, course development and course quota allocation. The locus of decision making on these areas lies at the faculty and department level of the organizational hierarchy of post secondary education. State Coordinating Authorities, the Commonwealth Tertiary Education Commission and groups external to post secondary education, such as professional associations and employer organizations, have little direct influence in the decision making related to cross sector transfer. The relationship between faculty decisions on admissions and public policy on cross sector transfer opportunities for TAFE graduates is uncertain and tends to discourage student movement from the TAFE to higher education sectors. Any agenda for change needs to provide a positive and systematic commitment to intersector coordination involving institutions, State Coordinating Authorities and CTEC.

7.2 Decisions on cross sector transfer are a small subset of the total pattern of decision making within a higher education institution. This pattern of decision making, the assumptions on which it is based and the objectives it seeks to realize constitute the organizational culture of an institution. The internal and external competition for resources holds the central place in decision making in higher education institutions. This competition for resources is of primary concern to each faculty and department and is a principal determinant of their approach to their major functions. It places a high value on the perceived academic status of an institution or faculty. Academic excellence is pursued in higher education institutions as an educational objective. However, given the values implicit in higher education, the pursuit of high academic status also confers an advantage in the competition for resources. High status can be parleyed into a greater share of resources. These factors dominate the organizational culture of higher education institutions.

7.3 Staff in higher education institutions often view qualifications and students in terms of an educational hierarchy which is based on a dichotomy of theoretical and empirical knowledge. Middle level TAFE courses are perceived to be lacking in theoretical knowledge and are therefore regarded as educationally inferior to higher education courses. Middle level TAFE courses are for example, assessed for admission purposes on the balance of theoretical and empirical knowledge in their curriculum. Underlying the reluctance of many faculties and departments to make effective provision for cross sector transfer is the concern that to admit more than a very small number of TAFE graduates will dilute the faculties academic status and disadvantage it in the competition for resources. Applicants who have taken tertiary admission examinations are preferred because their academic performance can be easily quantified and they can be readily integrated in the hierarchical academic environment of the institution. This preference for a quantifiable index of academic standing can be seen in the practice of the UWA Arts Faculty in encouraging TAFE graduates to take the alternative test for adult admission (ATAA). The test is usually reserved for applicants without formal education qualifications. Superior performance in the four hour test is seen by the Faculty as a more reliable index of academic ability than a completed middle level TAFE qualification.

7.4 The TAFE and higher education sectors of post secondary education function as two parallel systems with little congruence or interaction between them. Arising from this environment is the view among staff that TAFE and higher education students represent separate and exclusive constituencies. It is implicitly assumed that as a group students in the TAFE sector are educationally not as well prepared for higher education as the school leaver cohort. There are indications that there is an inverse relationship between an institution's academic prestige and the number of TAFE applicants who seek to enrol in its courses. In 1986 the WA College of Advanced Education made fifty three percent of the four hundred and sixty six offers of places to TAFE applicants, that is two hundred and thirty eight places. Curtin/WAIT and Murdoch University made twenty seven and nineteen percent respectively, ninety eight and eighty eight places in absolute figures. The University of Western Australia offered four places or less than one percent of total offers (1). While there are a range of contributory factors underlying these figures, many can be related to perceptions of academic status.

7.5 The project encountered individual staff in the TAFE and higher education sectors who were very supportive of cross sector transfer and of the aspirations of TAFE graduates. However, generally the procedures and policies pursued by faculties and departments reflected the practices described above. It was found that this situation could change when a department or faculty had difficulty in filling its admission quota with applicants who had taken the tertiary admission examinations. The potential loss of quota places and the resources tied to them was of greater concern to the Department than the admission of a significant number of TAFE graduates. The positive response to cross sector transfer made by the Department of Surveying and Mapping at Curtin can be attributed, in part, to such a situation.

7.6 The locus of decision making relating to cross sector transfer is found at the faculty and department level of the organizational hierarchy of post secondary education. Cross sector transfer is affected by four processes in higher education institutions; admissions, the granting of advanced standing, course development and course quota allocation. The framework of decision making in these areas is determined at institution and faculty level. Decisions on admissions and course development are taken at faculty and department level. Under this devolved structure individual staff members are required to exercise a high level of personal discretion over the admission of TAFE applicants and the course exemptions they are granted.

7.7 The lack of external influence has meant that there is little accountability in terms of public policy for decisions taken at faculty and department level which determine the environment for cross sector transfer. The "centre of gravity" of decision making at faculty and department level tends to be insulated from external inputs by the organizational culture of higher education institutions. At the institutional level decision making is interactive with, and responsive to, public policy and input from industry and the community. However CTEC and State Authorities have not generally committed resources to directly influence decision making within institutions, for example through the provision of special enrolment places. Organizations external to post secondary education, such as professional associations and employer organizations, although they may be represented on advisory bodies or consulted for specific purposes, have only a diffuse and marginal influence on the the processes of admissions, course development and course quota allocation in faculties and departments.

7.8 The project identified specific features of the educational environment inhibiting and promoting the development of cross sector transfer. The features required to improve provision for student movement from the TAFE to higher education sectors are:

- collection of data to provide feedback on institutional decisions influencing cross sector transfer;
- public definition of the standing of middle level TAFE qualifications in terms of institutional admission requirements, course admissions requirements, selection criteria and advanced standing;
- the use of equivalent competence of TAFE graduates and students in degree courses as a criterion for determining the standing of TAFE qualifications for admission and advanced standing;
- consultation on student movement and course development between TAFE and higher education institutions; and
- common and equitable frameworks for selecting between applicants from different educational backgrounds informed by a sound knowledge of TAFE courses and assessment procedures.

Factors promoting and inhibiting transfer are discussed in relation to the processes of admissions, the granting of advanced standing, course development and quota allocation.

Admissions Process

7.9 The decisions made in the course of the admissions process relate to the educational standing of the applicant. The stages of the admissions process can be viewed as a set of "gates" because to enrol the successful applicant must satisfy the prerequisite conditions of each step before proceeding to the next. The admissions process is composed of three decision making frameworks at institution and faculty level. These are:

- the setting of institutional admission requirements;
- the setting of course admission requirements; and

- faculty selection procedures.

Figure One (see page 50) illustrates the student pathway through the admissions process. Details of the practices applicable to admissions and advanced standing in degree courses in engineering and visual arts in WA higher education institutions are contained in the appendices One to Six.

7.10 Higher education institutions do not have the necessary information to provide an effective feedback on the outcome of their admission practices on student movements from the TAFE sector. Nor can they monitor the outcome of changes to these practices. For example, the data quantified on students' educational background by The University of Western Australia does not separately identify students with TAFE qualifications from the rest of the student body. The data bases maintained by Curtin and the WA College can distinguish the TAFE applicant but not the level of his or her qualification or the field in which it was gained.

7.11 The first stage of the admissions process is the institutional admission requirement. This is formulated by the central academic council of the institution. Satisfaction of this admission requirement makes an applicant eligible to enter the institution, although not necessarily a specific faculty. Some higher education institutions frame requirements in terms of TAFE qualifications while others do not. The explicit public recognition of middle level TAFE qualifications in terms of institution admission requirements is a prerequisite feature of a positive environment for credit transfer. It will enable TAFE students and graduates to confidently plan access to higher education. Curtin's student handbook includes a statement recognizing TAFE Certificates and Diplomas as conferring equivalent matriculant status. However, only those courses judged by the University's Matriculation Committee to incorporate a significant theoretical component of two years (full time) duration are accepted in practice. Lack of explicit recognition, even where it does not prohibit the admission of TAFE applicants requires faculty staff to exercise a high level of discretion and constrains the opportunity for students to plan their educational careers. The policies of The University of Western Australia and the WA College provide for applicants with TAFE backgrounds to be admitted under "blanket" discretionary clauses in their admission regulations.

7.12 Course admission requirements represent a major stumbling block to the admission of TAFE applicants, more so than institutional prerequisites. They are formulated at the faculty or department level, although they may be subject to approval or review by the central academic council. Professional associations and to a lesser extent employer organizations may have some influence through professional accreditations or advisory bodies. Handbooks clearly set out course prerequisites in terms of year 12 curricula. They generally do not mention the standing of middle level TAFE qualifications in terms of those requirements. There was no such information in handbooks for any of the degree courses covered by the project. When they make direct contact with faculty staff, prospective TAFE applicants may find that their qualifications are not acceptable in terms of course prerequisites. The faculties often insist on congruence between their degree course and/or its prerequisite year 12 subjects and the curriculum of the TAFE course taken by the applicant. Effective provision for credit transfer cannot be established on the basis of congruence of the curriculum of middle level TAFE and degree courses. Given the different objectives of these courses such congruence is unlikely to be common and in any case it is a difficult and time consuming task to establish in detail.

7.13 The criterion of equivalent competence represents the spirit, and congruence of curriculum, the letter, of cross sector transfer. The application of the first promotes cross sector transfer while the second will inhibit student movement. The project has adduced a number of examples which illustrate this point. A focus on congruence between the mathematics and science curriculum of TAFE courses and the prerequisite year 12 subjects for the degree have raised difficulties with respect to TAFE graduates seeking enrolment in the Curtin University Engineering Faculty. Given that there are four separate year 12 subjects involved, middle level TAFE engineering qualifications do not meet the course admission requirements without further bridging study. By contrast, the concept of equivalent competence as adopted by the Curtin Department of Surveying and Mapping looks at the relationship between TAFE and degree courses in terms of the relative competence of TAFE graduates and students in the degree courses. The view is taken that any specific deficiencies in knowledge can be remedied during the course. TAFE graduates appear to form a significant proportion of students in the surveying/cartography degree courses and an insignificant and inconsistent proportion of engineering degree courses.

7.14 Generally, those faculties and institutions which base admissions criteria on congruence of curriculum do not provide bridging units to overcome specific deficiencies in knowledge. Both the Engineering Faculty and the Department of Surveying/Cartography at Curtin have access to an alternative sequence of mathematics units in the first year of their courses for successful applicants who have not completed year 12 Mathematics II and III. The endpoint competencies for the two sequences are the same as far as course requirements are concerned. The Department of Surveying and Mapping employs the alternative sequence to facilitate the admission of TAFE graduates. The Faculties of Arts and Engineering at The University of Western Australia have not to date adopted the criterion of equivalent competence. The difficulties for TAFE graduates are compounded when this is combined with the lack of bridging courses. UWA may be discouraged from offering bridging units by the fact that such courses are not counted as part of the institution's student load for the calculation of funding. In the engineering field the TED offers a number of bridging units enabling TAFE graduates to satisfy the prerequisite conditions for the Curtin Bachelor of Engineering programme. These measures could be expanded to make bridging sequences available within the structure of middle level TAFE courses.

7.15 Course selection procedures often constitute the major obstacle to the higher education aspirations of TAFE graduates. Selection is made at the faculty or department level with perhaps some oversight from staff from the central administration. In faculty selection processes lack of knowledge of the content and assessment procedures in middle level TAFE courses is a major inhibitor of cross sector transfer. There is also a lack of public information on the criteria and procedures used to select between applicants, particularly those from different educational backgrounds. This contributes to the difficulty of rationally planning access to higher education on the basis of a TAFE qualification. In a number of faculties staff responsible for selection had little current knowledge of the middle level TAFE courses in the same field or the assessment procedures used in them. They usually had a much more detailed knowledge of year 12 courses and the tertiary entrance examinations. Given the difference in the level of knowledge of the educational backgrounds of the applicants it is likely that staff would feel on firmer ground in giving preference to the school leaver applicant over the TAFE graduate. Data is not collated on TAFE applicants who are eligible but not selected for admission and so it is not possible to verify the equity of selection procedures.

7.16 The use of selection criteria which allow equitable comparisons between the individual merit of applicants from different educational backgrounds encourages cross sector transfer. This approach is compatible with the selection processes used by the departments in the visual arts field at Curtin and the WA College which give weight to the artistic merit of the applicants' portfolio as well as their academic qualifications. The quality of the applicants' portfolios represents a common and equitable frame of reference when selecting between applicants of different educational backgrounds. The subjective nature of the determination of "artistic merit" is mitigated by the fact that portfolios are assessed by a panel of staff using established guidelines. While the use of portfolios is not practicable outside the visual arts field other faculties could develop an equitable frame of reference for selection through a sound knowledge of relevant middle level TAFE courses and their assessment procedures. Such information would allow a faculty to develop and publicly articulate equivalent standards of performance between year 12 and middle level TAFE courses to be employed in the selection process. In the current situation comparisons are made on implicit criteria which are difficult to apply and interpret on a consistent basis and are not widely known.

Advanced Standing

7.17 The determination of exemptions from course requirements for previous study in a TAFE course is made at the department, or more rarely the faculty, level. In some institutions such decisions may be vetted by a central committee. For example, at The University of Western Australia any exemptions which would involve a student going into a second or subsequent year of a course have to be approved by the Status Committee after an examination of the student's educational standing. Agencies external to higher education institutions have no influence in the granting of advanced standing.

7.18 The points discussed in the context of the admissions process are equally relevant to the determination of advanced standing. The following characteristics are evident:

- the criteria for granting exemptions are usually implicit and staff are required to exercise a high level of discretion in determining whether to exempt TAFE graduates from course requirements;
- there is no public information available to TAFE graduates on the standing of their qualifications in higher education making it difficult to make informed decisions on accessing higher education;
- departments often focus on the exact congruence between TAFE and higher education courses rather than equivalent levels of competence of TAFE graduates and students in degree courses; and
- decisions on advanced standing are often not informed by a sound knowledge of the content and assessment procedures of the TAFE course involved.

7.19 The Curtin Department of Surveying and Mapping provided the only example of a listing of standard exemptions granted for attainment of specified levels of performance in relevant middle level TAFE courses. No information on advanced standing is published in student handbooks. The contrast between the faculties employing the criteria of curriculum congruence and equivalent competence can be illustrated by reference to the visual arts field. The Curtin Departments of Fine Arts and Design often grant between one and two years advanced standing for study in the three year full time TAFE Diploma courses in the same field on the basis of equivalent competence. The Faculty of Arts at UWA and the Department of Visual Arts at the WA College grant exemptions of around one quarter of a years study for the same qualifications on the basis of incongruent curriculum.

Course Development

7.20 In the long term the most decisive influence on the environment for cross sector transfer is the pattern of provision of courses in TAFE and higher education. Courses are developed at the department level and progressively vetted by decision making bodies within institutions, ultimately being endorsed by the central academic council and the governing body of the institution. CTEC, State Coordinating Authorities, professional associations and employer organizations make an input into the development of courses. CTEC support for two tier TAFE/higher education courses has provided useful models for course development in terms of intersector coordination. However, to date there has not been widespread improvement in the provision for cross sector transfer as a part of the course development process. To the extent that course development is cognizant of cross sector transfer and intersector coordination the difficulties faced by students in moving from one award level to another, and the difficulties experienced by departments in making provision for such students, can be reduced. At present the aspirations of TAFE students to enter higher education can be stymied because TAFE and higher education courses are developed in isolation from each other.

7.21 Cross sector transfer and intersector coordination are rarely considerations in the development of TAFE or higher education courses. This reflects the generally poor level of consultation between institutions and faculties in the TAFE and higher education sectors. In some cases in the fields covered by the project TAFE course advisory committees include a staff member from a higher education institution. There is no reciprocal TAFE membership on advisory committees in higher education institutions. The project did not encounter any other formal provision for consultation between faculty staff in the same field in TAFE and higher education institutions. In some areas contacts between staff were made through common membership of the relevant professional association and through other professional relationships. In the engineering field there has been ongoing consultation between Curtin and the Technical Education Division on the subject of the standing of middle level TAFE qualifications in terms of course prerequisites. However, these contacts have not extended to matters of consultation on course development.

7.22 Overall in engineering and visual arts there is no formal provision made for consultation between institutions or faculties in the TAFE and higher education sectors on course development and intersector coordination. Decisions on course development which influence the environment for cross sector transfer and the higher education aspirations of TAFE students are taken in isolation. For example, in the early eighties to rationalize its internal teaching provision the Technical Education Division made significant changes in the mathematics curriculum of its middle level engineering and surveying/cartography courses. Unfortunately, the effect of those changes on cross sector transfer was not considered. They reduced the standing of the TAFE courses in terms of the prerequisite requirements for engineering and surveying/cartography degree courses making it more difficult for TAFE graduates to enter the engineering courses and reduced the advanced standing granted in the surveying/cartography course. Changes made in degree courses in isolation will have a similar constraining effect on cross sector transfer.

Course Quotas

7.23 The size and character of admission quotas also affects on the higher education aspirations of TAFE students. Course quotas are usually allocated at faculty level from a pool which in turn has been set by the central administration of the institution. The major responsibility in the allocation of course quotas usually lies with higher education institutions based on their assessment of relative levels of student demand. CTEC and/or State Coordinating Authorities promote the provision of additional quota to particular disciplines and allocate extra places at the margin of existing course quotas. The effect of course quota sizes is not simply to make entry more or less competitive per se. Where course quotas can be filled with applicants who have taken the standard tertiary entrance examinations, or those with previous study in higher education, faculties generally concentrate their admission and selection processes on those groups. If a faculty cannot fill its quota from school leaver applicants the potential loss of quota-tied resources provides a strong incentive to tackle the issues associated with cross sector transfer and accept TAFE graduates. Consequently the level at which course quotas are set, relative to the demand from school leavers, has a major impact on the outcome of applications from alternate entry students including TAFE graduates.

7.24 The character of admissions quotas can also determine the outcome of applications for enrolment. For example, The University of Western Australia sets two quotas for each course. The group one quota applies to applicants who have taken the standard tertiary entrance examinations within the last two years. The group two quota applies to all other applicants and is only a fraction of the size of the group one places. TAFE graduates have to compete with applicants from other educational backgrounds, including those with previous study in higher education, for a relatively small number of places in the group two quota. It is understood that this quota system has been established in response to CTEC policy promoting the provision of places for school leavers. The practices followed by Curtin set a defacto quota on the admission on TAFE graduates. For admissions purposes TAFE qualifications are arbitrarily set low equivalent TEE scores which are not related to the performance level of the individual student. The effect of this process is to limit the admission opportunities of these students.

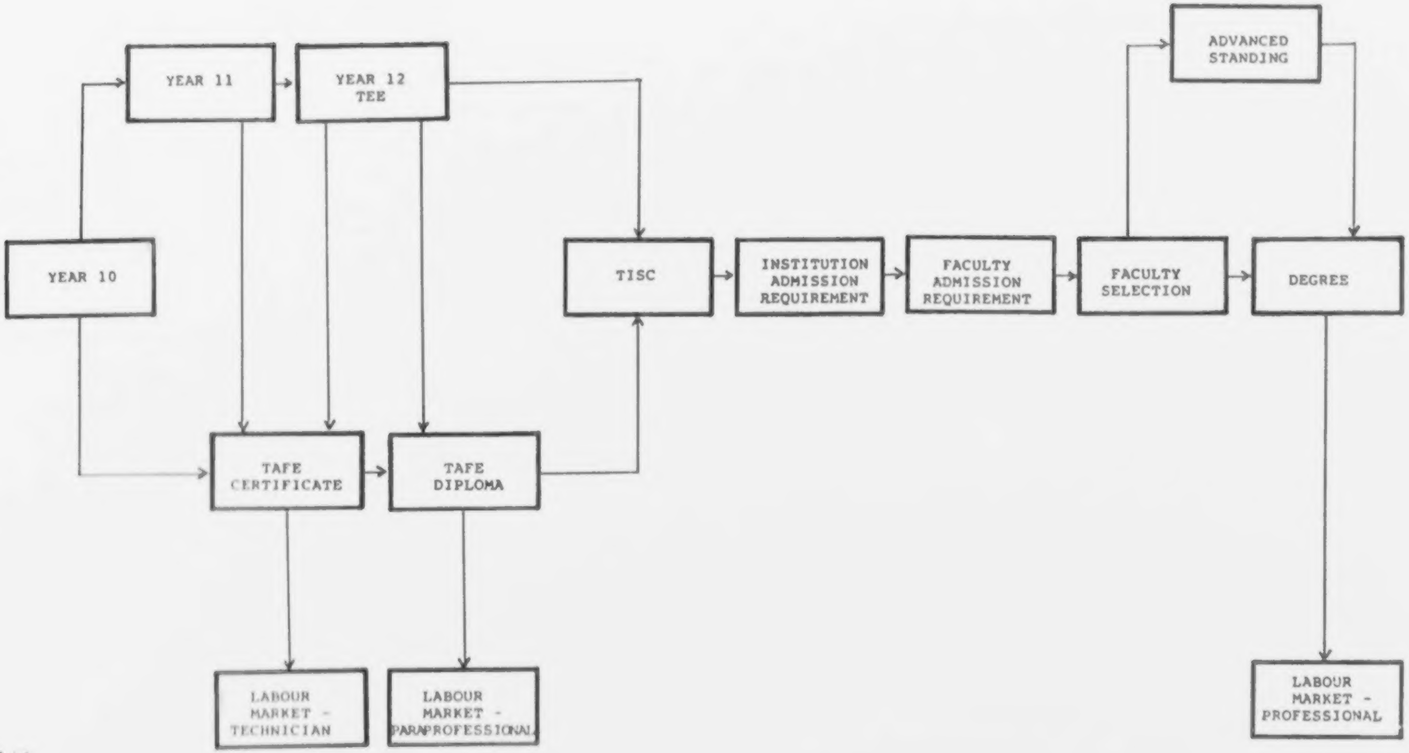
YEAR 10
YEAR 11
YEAR 12 TEE
TAFE CERTIFICATE
TAFE DIPLOMA
LABOUR MARKET - TECHNICIAN
LABOUR MARKET - PARAPROFESSIONAL
TISC
INSTITUTION ADMISSION REQUIREMENT
FACULTY ADMISSION REQUIREMENT
FACULTY SELECTION
ADVANCED STANDING
DEGREE
LABOUR MARKET - PROFESSIONAL

Figure 1: Student Pathways in Post Secondary Education

Labour Market Environment for Cross Sector Transfer

8.1 A survey of the relevant labour markets in the fields of engineering and the design area of visual arts suggests that existing occupational structures and employment practices constrain the opportunities for cross sector transfer between middle level TAFE and degree courses. There is a clear distinction between the professional and paraprofessional levels in the labour market corresponding to the interface between the TAFE Diploma and degree awards. A range of factors reinforce this demarcation. They include undefined promotional pathways and limited incentives to upgrade to a degree, the lack of part time or sandwich courses (in engineering), the need for greater financial assistance to be provided by government and industry and the length of time to complete a degree course. Cross sector transfer is a means of redressing this inflexibility in the labour market.

8.2 While the survey does not pretend to be exhaustive, it did identify occupational structures and employment practices which impacted on the demand for cross sector transfer. The survey contacted ten public and private organizations with an engineering workforce and six private companies in the design field. In addition to interviewing organizational management the survey contacted twenty one employees in the engineering field and a small number in the design field. Of the ten organizations in the engineering field, four were major public authorities, four large private companies and two were smaller private firms of consulting engineers. The six companies in the design field generally employed only a small number of employees in a design capacity. There were variations in occupational structures and employment practices between the public authorities, the larger private companies in the engineering field and the smaller companies in both the engineering and design fields.

8.3 The survey found that in the public authorities and larger companies in the engineering field provision and incentive was made for upgrading from the trades to technical to paraprofessional levels. In the public sector there is a hierarchy of paraprofessional grades or positions in which the completion of TAFE Certificate and Diploma qualifications brought progression through promotion. The qualitative evidence produced by the survey suggests that a significant number of people work their way up from the trades level by completing middle level TAFE qualifications on a part time basis. The occupational structure in public authorities provides incentives for individuals to progress through to completing a TAFE Diploma qualification. In the large private companies in the engineering field there is not such a firm hierarchy of positions and the incentive to upgrade qualifications is orientated towards greater remuneration and responsibility. The incentive to acquire middle level TAFE qualifications generally diminishes after completion of the TAFE Certificate although some individuals do complete their TAFE Diploma. The public authorities and most of the large private companies will provide study leave of up to five hours per week to be matched by an equal amount in the employees private time. Some of the public authorities had traineeship schemes providing financial assistance to selected employee's to upgrade from the trades to the paraprofessional level. In some cases these schemes had been suspended because of financial cutbacks.

8.4 Generally the organizations surveyed did not recruit for their professional staff among their paraprofessional workforce. In the engineering field at the professional level all the organizations surveyed recruit from students or graduates of the Bachelor of Engineering courses at Curtin or UWA. Some of the public authorities and the large companies provide cadetships or pay the costs of fees and books for students in their second or subsequent year of the course to secure their employment with the organization on graduation. In the design field, companies employed graduates from the open market as they required them.

8.5 Interviews with employees at the professional and paraprofessional level in the engineering field confirmed the existence of a clear demarcation between the two levels. The majority of employees interviewed were in the public sector with a small number employed in the private sector. From these interviews a common set of factors can be identified which prevent all but a tiny handful of individuals from seeking to upgrade their middle level TAFE qualifications to a degree once they are in the workforce. These are:

- lack of part time courses available outside of working hours and lack of sandwich style courses;
- the length of time taken to complete the degree on a part time basis if minimal credits are granted;
- lack of a promotional pathway or incentive within the organization; and
- lack of financial assistance provided by the organization.

8.6 Without a significant amount of credit for previous studies the four year Bachelor of Engineering course takes around ten to twelve years to complete on a part time basis, while working full time. A number of employees who had obtained their TAFE Diplomas part time in the course of their employment indicated that this length of time precluded further study. Employees were often aware through an informal "grapevine" of the difficulty of obtaining advanced standing in degree courses on the basis of their TAFE qualifications. A couple of employees who were currently studying part time at Curtin indicated that when they got towards the end of the course they would seek leave or resign and spend a year full time completing the degree to reduce the length of time involved. Employees commented on the lack of a promotional pathway for those seeking to upgrade from a TAFE Diploma to degree. Once the higher qualification was obtained they would have to compete for a position on the same basis as any other applicant without appropriate consideration of their work experience. In two of the public authorities this would involve a transfer to a country posting for a number of years as this was the practice for new graduates who were taken on.

8.7 Those employees in the engineering field at the paraprofessional level who had recently completed a TAFE Certificate or Diploma qualification generally found the occupational structure satisfactory. However, those individuals who had held such qualifications for longer periods were more apt to express their frustration at not being able to progress past the paraprofessional level. It was evident that the constrained economic climate had reduced employment opportunities at the professional level. In a number of instances, the management indicated that in more favourable circumstances, around a third of their TAFE Diploma qualified paraprofessional staff would seek to upgrade their qualification to a degree. Most of those professional staff who gained their qualifications while in the workforce, either held Associateships from WAIT or had commenced their studies when the Associateship was being offered. The Associateship was a sub-degree qualification of around three years in duration which had developed from the TAFE Diploma course at Perth Technical College. It was supplanted by the degree programme in the early seventies. As the Associateship has evolved into a four year Bachelor of Engineering with a greater emphasis on mathematics, the promotional gap between middle level TAFE and degree courses has widened. The smaller engineering firms and those in the design field employ people at the level they require and provide no incentive or encouragement for upgrading of qualifications by their employees hence there is not the same requirement for the upgrading of employee's qualifications.

8.8 The professional associations generally reflect and sustain a firm demarcation between the professional and paraprofessional levels in the labour market through their membership requirements. The engineering field is highly structured with direct links between award levels and occupational roles. The Institution of Engineers, Australia (IEAust) and the Australian Institute of Engineering Associates (AIEA) have identified a hierarchy of four occupational levels in the field. These are professional engineer, engineering associate, engineering technician and engineering tradesman, of which the first two form the professional and paraprofessional levels. The IEAust and the AIEA have defined educational prerequisites for employment and professional recognition. The IEAust stipulates graduation from an accredited professional engineering course in a University or College of Advanced Education as a prerequisite for employment as a professional engineer. A further three years of structured professional experience is required for admission to corporate membership of the Institution. At the engineering associate level, the AIEA specifies graduation from a course that meets its educational parameters, as a prerequisite for membership as a qualified engineering associate. Such a course must involve at least 1500 hours of study at an appropriate level when taken on a full time basis. An additional five years of relevant work experience is required to reach the status of Experienced Engineering Associate (2). The degree courses at Curtin and UWA are accredited by the IEAust while the TED Engineering Diplomas meet the AIEA's requirements.

8.9 In the field of land surveying, the largest of the three occupational branches in the surveying discipline, there is a firm division between the professional and paraprofessional level. Professional land surveyors are licensed by the Land Surveyors' Licensing Board, after they have completed their degree, two years articles and a practical examination. While there is some overlap between the work of land surveyors and TAFE Diplomates, the latter cannot sign legally binding cadastral survey documents. In engineering surveying there is no licensing requirement and graduates from degree and TAFE diploma courses compete for employment. There is no firm distinction between the professional and paraprofessional level. In mine surveying there is a licensing requirement, although it is attainable after one year's underground experience by graduates from both degree and TAFE Diploma courses. The division between the professional and paraprofessional level in mine surveying is defined by the licensing requirement, and not strictly by award level. Membership of the Institution of Surveyors, Australia requires a degree and completion of two years professional articles. Most members of the Institution are licensed land surveyors. Graduates from both degree and TAFE Diploma courses are eligible for membership of the Institution of Mining and Engineering Surveyors.

8.10 In the field of cartography there is no firm distinction between the professional and para professional level in the workplace and there is some overlap between graduates of TAFE Diploma and degree courses. However, the Institute of Cartographers distinguishes between full membership and associate membership. The former is open to graduates of degree level courses. Associate membership can be gained with a TAFE Diploma, after seven years experience and with an Associate Diploma, after two years experience.

References

1. Bardsley and Gallagher. p 20

2. D.J. Little and W. Wheeler. Guidelines on Education for the Engineering Industry for Practitioners, Employers and Educationalists. The Institution of Engineers Australia and the Australian Institute of Engineering Associates. Canberra. 1983. p 21,22 & 28

SECTION 4: FUTURE PROVISION FOR CROSS SECTOR TRANSFER

Summary

Effecting a significant increase in the mobility of students between TAFE and higher education requires a comprehensive agenda for change covering post secondary education and the labour market. The most significant items on this agenda are the need for concrete incentives for employers and education providers to promote cross sector transfer and the need for public information on the opportunities and procedures for transfer.

Pilot admission projects involving enhanced administrative procedures and an allocation of places for TAFE graduates have a vital role to play as instruments of change. Properly monitored they can sustain and increase the momentum for change that has developed in recent years by demonstrating the viability of systematic provision for cross sector transfer. The Western Australian Post Secondary Education Commission and the State's higher education institutions will seek the assistance of CTEC in the establishment of such pilot admission projects in WA for the 1988 academic year.

The recommendations of the Report also specify the critical need for enhanced consultation between TAFE and higher education providers in the areas of course development and student movement. Admission procedures in higher education and counselling services in both TAFE and higher education would repay close scrutiny and review. In the final analysis systematic provision for cross sector transfer requires a more flexible pattern for the provision of post secondary education in this county. The benefits of such flexibility extend beyond credit transfer.

Promoting Cross Sector Transfer

9.1 Policies which are cognizant of the total environment for cross sector transfer are needed to effect major changes. Effective provision and encouragement for transfer will need to be based on a shift in the organizational culture of post secondary education and industry. This will require commitment and resources to influence the decision making frameworks of post secondary education institutions and the choices of TAFE graduates in the workforce. This commitment would be encouraged through the introduction of pilot admission projects acting as instruments of change to demonstrate the viability of cross sector transfer. The Western Australian Post Secondary Education Commission, with the support of the State's higher education institutions is seeking assistance from CTEC for pilot admission projects in selected fields.

9.2 Effecting a general improvement in the level of cross sector transfer will require the provision of incentives which have some currency in the organizational cultures of post secondary education and industry. The current unfavourable situation for cross sector transfer has developed because organizations and individuals have responded to a set of incentives and disincentives created by the environment in which they act. Public authorities, private companies and post secondary education institutions are habitually used to screening out demands on their resources which do not coincide with the real determinants of their organizational well-being. The articulation of policy statements enjoining a desired course of action is unlikely, of itself, to be accorded a high priority by these organizations. The provision of positive incentives for upward mobility from the paraprofessional workforce to the professional level in the labour market will need to involve Commonwealth Authorities in education and industry as well as State agencies and higher education institutions.

9.3 In Volume One of the Report for the 1988-90 Triennium CTEC have recognized the need to develop a systematic approach to improving the provision for cross sector transfer in post secondary education. The section on academic credit states:

> "... it (the Commission) believes that action must be progressed with the object of having functional credit transfer guidelines operational before the end of the 1988-90 triennium ... In the Commission's view a set of empirical guidelines developed over time is not a sufficient response to the immediate need for action in relation to credit transfer."(1)

This is an important recognition of the need for a comprehensive framework for change rather than a piecemeal approach to isolated obstacles to student movement from TAFE to higher education. The Commonwealth/State Credit Transfer Coordination Committee proposed by CTEC in Volume One is a necessary component of the framework for promoting cross sector transfer. Similarly, placing credit transfer on the agenda of the Australian Education Council is a useful strategy in raising the profile of credit transfer as a issue for the post secondary education system.

9.4 CTEC's statement of policy on credit transfer recognizes the necessity of committing resources to achieve improvements in the provision for credit transfer.

> "The Commission is aware that the activities likely to be required to develop and implement credit transfer guidelines, (for example, analysis of current arrangements, comparison of courses, writing transfer agreements, negotiating on different institutional perceptions) are resource intensive."(2)

The section recommends that $500 000 be provided over the 1988-90 triennium in the Evaluations and Investigations Programme for the purpose of developing credit transfer guidelines among all three sectors of tertiary education.

9.5 The framework for change in the post secondary education system should address four areas:

- dissemination of information to TAFE students and graduates on degree courses and applicable requirements, selection procedures and exemptions from study;
- administrative and academic procedures in higher education institutions relating to data collation, admissions and advanced standing;
- consultation between the TAFE and higher education sectors on course development and assessment of the educational standing of TAFE qualifications; and
- pilot admission projects in selected fields to demonstrate the viability of cross sector transfer programmes from middle level TAFE to degree courses.

9.6 The dissemination of information on the standing of TAFE qualifications in higher education institutions is a prerequisite condition for an increase in the level of student movement from the TAFE to higher education sectors. Such information will increase demand for transfer by allowing students in the TAFE sector to plan access to specific higher education courses with some degree of confidence. Changes to administrative and academic procedures in higher education institutions need to provide a framework for equitable comparison of the merit of the TAFE graduate with applicants of other backgrounds. Given their vocational experience and high level of motivation, such procedures are likely to bring a modest but sustained increase in the number of TAFE graduates enrolled in degree courses. Consultation between TAFE and higher education institutions and faculties would enhance the level of knowledge of TAFE and higher education courses and their assessment procedures, as well as helping to redress any difficulties experienced by students in making the transition between courses.

9.7 Revised provisions for the admission of TAFE graduates and the determination of advanced standing for TAFE qualifications would need to be based on the criterion of the general vocational and academic competence of the applicant, rather than strict comparison of the curriculum of the courses involved. The performance of applicants from different educational backgrounds may then be related to the objectives and assessment criteria of the course of study which forms the basis of their application, whether that be the tertiary entrance examinations or a middle level TAFE qualification. There is nothing to suggest that the ability and motivation to perform well in a middle level TAFE course is not transferable to study in a higher education institution. The TAFE graduate may often have displayed a vocational aptitude and academic discipline which has to be imputed to other applicants. It will be helpful if higher education institutions are able to ensure that their procedures distinguish between the individual merit of applicants, rather than specific characteristics associated with a particular educational preparation for higher education.

9.8 The development of cross sector transfer has gained increasing momentum in recent years assisted by funds granted for investigative studies under the CTEC Evaluation and Investigations Programme. The direction of this study programme has culminated in the two recent reports on cross sector transfer by the TAFE National Centre for Research and Development, (Parkinson (1985) and Parkinson et al (1986)). They present a comprehensive description of the state of cross sector transfer provisions throughout the country. The discussion of the factors constraining the development of cross sector transfer and the measures recommended to redress these features in the second report is equally comprehensive. The final recommendation of the report calls for the funding of monitored pilot admission projects as instruments of change. This recommendation is the logical outcome of the studies conducted in the field to date. The maintenance of the momentum for change suggests that pilot admission projects partner the development of guidelines governing credit transfer in the overall framework for change.

9.9 Pilot admission projects are a necessary part of an effective framework for change. They provide a concrete incentive for change in higher education institutions and demonstrate the educational viability of cross sector transfer between middle level TAFE and degree programmes. They also provide for gradual introduction of new initiatives in the post secondary education system. There are precedents for the use of such programmes as instruments of change in promoting greater opportunities for socially and educationally disadvantaged groups in the community. The projects would involve the provision of funded places in degree programmes in selected fields for TAFE graduates in conjunction with revised procedures for the determination of admissions and advanced standing. The provision of funding tied to cross sector transfer will help to ameliorate the difficulties associated with change in higher education institutions and provide an incentive for the development of more equitable procedures. Significant changes in attitudes are more likely to occur when the practical viability of cross sector transfer is attested by concrete example. Pilot admission projects would be best conducted in fields where the current level of transfer is low to ensure that funding creates additional opportunities for TAFE graduates. It is also preferable that at least some of the pilot projects be in professional courses to maximise the relevance to the labour market.

9.10 The Western Australian Post Secondary Education Commission (WAPSEC) and the State's four higher education institutions have agreed to proceed with such pilot admission projects. The fields in which the projects will be conducted will be agreed between the institutions and the Commission. They will include engineering and visual arts and possibly other fields such as computing. It is proposed that a committee consisting of higher education, TED and Commission representatives will monitor the setting up of the projects, particularly the development of procedures for determining admissions and advanced standing. Initially the projects will give greater emphasis to the admissions process than to the granting of advanced standing. WAPSEC will seek the assistance of CTEC in the provision of a pool of places in degree courses to be allocated at the State level between the individual areas to the covered by the projects. It is envisaged that procedures will be in place to enrol TAFE graduates in the 1988 academic year. Resource constraints in higher education institutions will limit to a modest size the number of places to be allocated to professional courses but it is envisaged that the central pool will include sufficient places to produce a significant demonstration effect. The pilot projects are regarded as an initial measure to promote the development of cross sector transfer. In the longer term it is envisaged that revised policies and procedures would be needed to provide a more substantive basis for cross sector transfer provision.

Conclusion and Recommendations

10.1 A systematic approach to cross sector transfer from middle level TAFE to higher education degree courses can contribute to the goals of public policy on educational, economic and social grounds. Effective provision for transfer will increase the efficiency of post secondary education in the longer term and enhance its capacity to respond equitably to increased aspirations for higher education. Socially, cross sectoral transfer can contribute to equality of opportunity by making higher education more accessible. In the context of recurrent education transfer can redress rigidities and skill deficiencies in the labour market which inhibit economic development.

10.2 The objective of the project is to promote enhanced provision for cross sector transfer through a comprehensive agenda for change which addresses the educational and vocational environment for student movement. There is significant room for the improvement of current cross sector transfer provisions in engineering and visual arts in WA. Relative to the number of students in the TAFE and higher education sectors the level of student movements between the sectors is very small. In 1986 around four hundred students with TAFE qualifications entered undergraduate courses in WA's four higher education institutions, constituting under four percent of commencing undergraduate enrolments. Even given very generous provision for cross sector transfer it is unlikely that students with a TAFE background would make up more than ten percent of commencing undergraduate enrolments or number more than one thousand entrants in WA. Enhanced provision for transfer cannot be isolated from intersector coordination. Hence effective change requires improved liaison between TAFE and higher education providers at both administrative and academic levels. It will require a commitment from post secondary education institutions to new policy directions and implementation. The focus on academic status in an environment where status is linked to the competition for resources has sustained attitudes and practices which do not encourage cross sector transfer. The immediate environment for student movement from TAFE to higher education is determined at institution and faculty level. In many cases the policies pursued at these levels do not accommodate the wider considerations inherent in cross sector transfer.

10.3 There is a high level of interest in higher education among graduates of middle level TAFE courses in WA. To facilitate the aspirations of these graduates provision will need to be made for the following:

- collection of data to provide feedback on institutional decisions influencing cross sector transfer;
- consultation between TAFE and higher education institutions on student movement and course development;
- definition and public articulation by higher education institutions of the standing of middle level TAFE qualifications;

- development of equitable frameworks for selecting between applicants from different educational backgrounds;
- the use of equivalent competence as a criterion for determining the standing of TAFE qualifications for admission and advanced standing;
- greater availability of part time degree courses in professional fields outside of working hours and sandwich style courses;
- granting the maximum level of advanced standing for TAFE qualifications consistent with the maintenance of academic standards;
- provision of promotional pathways and incentives within existing occupational structures; and
- greater financial assistance from government and industry for employees seeking recurrent education.

10.4 Strategies for change which address constraints on cross sector transfer as phenomena which can be isolated from the organizational environment in which they occur will have a limited effect. To effect the required shift in the practices in higher education institutions CTEC and State Coordinating Authorities will need to provide incentives which have some currency in the decision making of institutions and faculties. The most effective method of providing this incentive is by tying resources to cross sector transfer in the form of pilot admission projects in degree programmes for TAFE graduates.

Recommendations

10.5 The project makes the following recommendations for change.

1. **CTEC and State Coordinating Authorities in consultation with TAFE and higher education providers develop a comprehensive agenda for improving provision for cross sector transfer including:**
    - **public definition of the standing of middle level TAFE qualifications in higher education;**
    - **data bases on student movement;**
    - **formal provision for consultation between TAFE and higher education providers on course development and student movement;**
    - **improved pattern of course provision for recurrent education; and**
    - **pilot projects for the admission of graduates of middle level TAFE courses to professional degree courses.**

2. CTEC and State Coordinating Authorities develop data bases on the level and character of student movement from TAFE to higher education to monitor the effect of existing and revised conditions for cross sector transfer.

3. Higher education institutions define the standard of performance required in middle level TAFE courses to satisfy institution and course admission requirements.

4. Higher education faculties develop admission procedures and criteria which assess the merit of applicants by relating their performance to the objectives and assessment standards of the course which forms the basis of their application. Effectively this means defining standards of equivalent performance for middle level TAFE courses and year 12 subjects and matriculation examinations.

5. For each degree course, faculties define a set of standard exemptions from course requirements for attainment of specified standards of performance in middle level TAFE courses in the same field of study. The above average TAFE graduate admitted to a degree course in the same field as their TAFE studies should receive full credit for the minimum duration of their TAFE course beyond the 12th year of formal education. For example an above average graduate from a three year TAFE Diploma course stipulating entry from year 10 should receive one years credit towards a degree in the same field of study.

6. Information on the standing of middle level TAFE courses in terms of institution admission requirements, course admission requirements, selection criteria and advanced standing for degree courses be provided in higher education handbooks and course materials. TAFE providers institute a programme to inform students in middle level courses of the above information.

7. CTEC and State Coordinating Authorities in consultation with higher education institutions establish pilot admission projects in degree programmes for graduates of middle level TAFE courses to demonstrate the viability of cross sector transfer.

8. TAFE and higher education providers institute reciprocal membership of academic staff on faculty and course advisory bodies. Formal provision be made for consultation between TAFE and higher education providers on course development and student movement.

9. Higher education institutions explore the feasibility of offering a wider range of professional and vocational courses out of working hours or in sandwich mode.

10. CTEC address with other Government agencies the provision of incentives to individuals and organizations in industry for recurrent training at degree level.

10.6 The Western Australian Post Secondary Education Commission (WAPSEC) and the State's four higher education institutions have agreed to undertake pilot admission projects for TAFE graduates. WAPSEC will approach CTEC for assistance in establishing additional places in professional degree programmes for the projects. A joint WAPSEC - institution committee will monitor the introduction of procedures to facilitate the admission of TAFE graduates commencing in the 1988 academic year.

References

1. CTEC. Report for 1988-90 Triennium. Vol 1. Part 1. Recommendations On Guidelines. p 129

2. ibid.

APPENDICES

Provision of Visual Arts Courses

1.1 The following Technical Education Division TAFE Diploma courses in the Visual Arts are relevant to the project; Art Studies, Fine Art (Painting & Sculpture), Graphic Design, Interior Design, Theatre Arts and Design, Printmaking, Studio Ceramics and Photography. TAFE Diploma courses in Arts Studies are also offered by Kalgoorlie, Karratha and Hedland Colleges.

1.2 WA has three degree conferring institutions in the visual arts; the Western Australian College of Advanced Education, Curtin University of Technology and The University of Western Australia. The WA College's two tier Associate Diploma and Bachelor of Arts in Visual Arts course commenced in 1986 at the Mt Lawley campus. It is offered by the Department of Visual Arts. Total enrolment for the Department is under one hundred EFTS in 1987 but expected to grow to around five hundred EFTS in the early 1990s. The course offers studies in the following fields; calligraphy (Associate Diploma only); printmaking; painting; ceramics; and textiles. Students undertake major and minor streams of study in the same or different fields. The emphasis is on study of a particular field in depth and students begin their chosen specialization from the first semester. The course is currently offered in the full time mode only with part time offerings to commence in 1988.

1.3 Curtin University of Technology has a well established programme in the Visual Arts offering Bachelor of Arts degrees in Fine Arts, Crafts and Design. Students complete an initial foundation year before specializing in their second and third years. The courses are available on a full or part time basis. Growth is constrained by the tight admissions sub-quota assigned to the Departments. The programme offers studies in the following fields; Design - graphic, media, advertising, and product/industrial; Visual Arts - fibre textiles, metal jewellery, painting, sculpture, ceramics; and printmaking.

1.4 The Centre for Fine Arts at The University of Western Australia offers a major and honours year in Fine Arts in the Bachelor of Arts degree. While there is some exposure to practical components the emphasis is primarily on art history and theory. In keeping with the generalist structure of the Bachelor of Arts programme students are required to complete first and second year units in at least one other discipline. The Centre was established in 1983 and has grown rapidly to an enrolment of forty students in the fine arts major (those taking final year studies in visual arts).

Provision of Engineering Courses

2.1 The following Technical Education Division TAFE Diploma courses in Engineering and Engineering related fields offered by the TED are relevant to the project; Civil, Mechanical, Electrical and Electronic Engineering; Surveying; Cartography; Metallurgy; Production Engineering; and Surface Mining. Karratha College offers TAFE Diploma courses in Electrical, Electronic and Mechanical Engineering while Kalgoorlie College offers a Diploma in Engineering Surveying.

2.2 Curtin and UWA offer four year degrees in engineering, the latter on a full time basis only. Both programmes commence with a foundation course prior to specializing in a specific engineering discipline. At Curtin the foundation covers a common first semester followed by a second semester which in general is common but involves partial specialization. At UWA the foundation course covers the first year. Applicants are normally required to have achieved a minimum score of fifty in four TEE subjects; Mathematics II, Mathematics III, Physics and Chemistry to be considered for selection. Although giving preference to applicants who have completed the above prerequisites the Curtin Faculty will consider applicants with a high TEE aggregate who have taken Mathematics I, II or III and either physics or chemistry at year 12 level. Such applicants would be required to complete bridging units. Students admitted to the Curtin Faculty with Mathematics I at the TEE are required to take an alternative sequence of mathematics units (Mathematics 104 and 105 instead of Mathematics 171 and 172) involving an additional two hours of study per week in the first year of the degree. The end point competencies are the same for both sequences. The UWA Faculty of Engineering offers degree courses in the fields of civil, electrical, electronic and mechanical engineering. In 1986 there were one hundred and ninety seven students in the common first year and three hundred and ninety nine undergraduate students in the Faculty as a whole. The Curtin Faculty of Engineering offers degree courses in Civil, Construction, Electrical, Information and Electronic, Computer Systems, Chemical and Mechanical Engineering. The course is offered on a full and part time basis. The common first semester is also available on a part time basis in the evenings, however subsequent years are only available during the day.

2.3 The WA School of Mines offers three and four year degree courses in Mining Geology, Extractive Metallurgy and Mining Engineering. Mathematics II and III, physics and chemistry at year 12 level are specified as admission requirements although applicants may be accepted with alternative qualifications and required to complete bridging units. In addition WASM offers an Associate Diploma in Mining with streams in surveying, metalliferous mining and coal mining. The latter stream is offered at the Collie Federated School of Mines on a part time basis only. Normal admission prerequisites are Mathematics I, physics and chemistry at year 12 level, although the latter is not required for the surveying stream. Again, applicants with alternative qualifications may be accepted and required to complete bridging units.

2.4 Within the Curtin Division of Engineering and Science the Department of Surveying and Mapping offers a three year Bachelor of

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Applied Science in Cartography and a four year degree in Surveying. Applicants are required to have passed Physics and preferably Mathematics II and Mathematics III at year 12 level. School leavers may enter the course with year 12 Mathematics I but they take a different sequence of mathematics units in their first year.

Common Admissions Procedures for Higher Education in WA

3.1 There are four categories of applicants seeking admission to WA's higher education institutions on the basis of Australian educational qualifications:

- school leavers who sat the Tertiary Entrance Examinations (TEE) or their interstate equivalent on completion of year 12;
- mature age applicants who sat the Tertiary Entrance Examinations after one year of part time study;
- mature age applicants who sat the alternative test for adult admission (ATAA);
- applicants with previous study in TAFE or higher education.

Higher education institutions may place their own specific admission requirements on each category of applicants. For instance, institutions require school leavers to satisfy a literacy requirement before they may be granted entry. Students from all of the above categories seek and gain entry to the degree courses in visual arts. Applicants who have taken the alternative test for adult admission are not eligible to seek admission to degree courses in engineering.

3.2 Applicants for higher education courses must satisfy a number of criteria to secure admission. Primarily, applicants from the first three categories above must achieve a competitive ranking in their examinations that puts them in contention for a place in the course of their choice. Secondly they must comply with the requirements for prerequisite study or aptitude that apply to some courses (including those in visual arts, engineering and engineering related fields). Applicants for the visual arts degree courses at Curtin and the WA College are interviewed individually and must submit a portfolio of their work for consideration.

3.3 School leavers also have to satisfy additional requirements for admission based on their performance in years 11 and 12. UWA, Curtin and the WA College require that school leavers fulfill the following stipulations.

- Complete the requirements for high school graduation as defined by the Secondary Education Authority, specifically, meet the literacy requirement by achieving a "D" pass in English, English Literature or General English and accumulate sixty course credit points (of which at least eighteen must be for year 12 subjects) by securing a "D" pass or better in ten accredited upper school subjects.
- Obtain a minimum "C" grade average in the six subjects taken in Year 12, with no more than one grade being a fail grade, and at least five subjects being accredited at year 12 level by the Secondary Education Authority.
- Satisfy the literacy requirement for admission to higher education by achieving a score of fifty or better in the English or English literature Tertiary Entrance Examination.

The University of Western Australia adhered closely to these requirements. At Curtin and the WA College students who satisfy the other criteria for admission but fail the requirements of high school performance or literacy are assessed for admission on their individual merits.

Tertiary Institutions Service Centre

3.4 WA has a centralized admission procedure for higher education administered by the Tertiary Institutions Service Centre (TISC). All applications from school leavers or mature age applicants who have sat the Tertiary Entrance Examinations (TEE) are processed by TISC except for a few cases where application is made for mid year entry. For other categories of applicants there are different policies prevailing at each institution. At the WA College such applicants may apply through TISC or direct to the relevant department. With two limited exceptions for courses in the education faculty, all applicants seeking entry into an undergraduate course at Curtin, must apply through TISC. At UWA applicants seeking entry into the first year of an undergraduate course must apply through TISC. Applications for entry into subsequent years are made direct to the Faculty concerned.

3.5 TISC processes all applications according to the same timetable although different procedures are employed for TEE applicants and those applying on the basis of TAFE qualifications. TEE candidates are assigned a computer calculated aggregate score based on their results. TISC creates a listing for each course, ranking all TEE applicants who have nominated that course as one of their four preferences. TISC forwards these lists to the institutions. In consultation with admissions staff the selecting departments and faculties make their assessment of applicants according to prevailing policy and procedure.

3.6 Unlike school leavers individuals applying solely on the basis of their TAFE qualifications are not initially ranked by TISC for selection. Their records are forwarded to the institutions where they have applied for entry. Usually the selecting faculty or department employs a variety of criteria to rank applicants in order of academic merit. This may involve, as in the Curtin Engineering Faculty, assigning them an arbitrary aggregate on the TEE scale. A listing of these rankings is transmitted to TISC which issues offers of student places on the basis of the rank order. Applications from TAFE students and graduates processed by TISC are significant in absolute terms, numbering in the hundreds, but represent only a small proportion of the total pool of around sixteen thousand applications per annum.

3.7 That part of the admissions procedure carried out by TISC itself neither prejudices or advantages applicants with a TAFE background, relative to TEE applicants. Admission is determined by admissions processes in higher education institutions.

WA College of Advanced Education Admissions Procedures

4.1 Possession of a TAFE Certificate or Diploma satisfies the institutional requirement for entry into the WA College. All applicants who have listed the visual arts programme as one of their preferences are interviewed and submit a portfolio for assessment. Applicants who have achieved the minimum TEE aggregate for College entry (305) are ranked by the Department of Visual Arts using their portfolio assessment and TEE score. TAFE graduates are allocated a ranking on a common scale based on the outcome of the Department's assessment of their portfolio and academic record. TAFE graduates have been admitted in small though significant numbers to the course since its inception. With the foreshadowed expansion of places admission quotas are not likely to be a major constraint on enrolling students with TAFE qualifications in the course.

4.2 Compared with the WA College's general stance on admissions the Department has a less liberal policy in granting advanced standing for studies in the TAFE Diploma. College regulations require that advanced standing be granted for specific units rather than in terms of a block exemption for a proportion of the course. Students may elect to enter the Associate Diploma course and less able candidates may be directed into it rather than into the Bachelor of Arts. After successful completion of the first year of study students in the Associate Dipioma course may apply to transfer into the degree course. Such transfers are not automatic. The programme commenced in 1986 and no record exists of a TAFE graduate being granted exemptions for previous studies. Exemptions would be granted for studio practice and drawing units but not for units on art theory. For holders of a TAFE Diploma in a relevant field the approximate ceiling of advanced standing is twenty percent of first year units. Within the bounds of College regulations the Head of Department has the final authority on matters of advanced standing.

Curtin University of Technology Admissions Procedures

5.1 Curtin will admit applicants who have graduated from a TAFE Certificate or Diploma course with a duration of at least two years equivalent full time study and incorporating a significant academic or theoretical component. A list of middle level TAFE courses which meet these criteria are set by the Matriculation Committee. The Admissions Office assigns holders of an 'acceptable' TAFE qualification an equivalent TEE aggregate of 315 for a Certificate and 325 for an TAFE Diploma. These scores place TAFE graduates near the bottom of the scale in consideration for admission to high demand courses. They may be varied at the discretion of individual departments or faculties depending on where they rank the applicant's suitability relative to the other candidates for admission to the course. The Matriculation Committee has the final decision on applicants who do not conform with institution or course admission requirements. The head of the relevant department is responsible for making a case for admitting the nonconforming applicant.

Visual Arts

5.2 All applicants who have listed the degree courses in fine arts, crafts or design as one of their preferences are interviewed and their portfolios assessed by a panel of staff. An applicant must attain the minimum necessary score to enter Curtin (305) to be accepted in the course. However once the applicant has passed this barrier the Department uses its original listing on the basis of interview/portfolio assessment, adjusted for TEE scores, to give the final ranking for making offers.

5.3 The Departments of Design, Crafts and Fine Arts grant advanced standing to holders of a TAFE Diploma based on an assessment of their portfolio and academic record. Diplomates with a superior portfolio may be admitted to the third year of the degree. Those with a satisfactory portfolio may be admitted to second year. In 1987 three TAFE graduates were granted advanced standing to enter second year of the degree courses in fine arts and crafts out of a total course intake of thirty five. These numbers are representative of the situation over the past five years. There is a perception within the Departments that the process of resource allocation within the institution constrains the opportunities for the granting of advanced standing. The final authority on the granting of advanced standing lies with the heads of school and division. As the Department is reluctant to grant advanced standing some TAFE Diplomates come in as normal first year students to secure entry. In 1987 there were three such students.

Engineering

5.4 In Engineering the Divisional Sub-dean implements admissions policy approved by the Faculty Board and has primary responsibility for admissions. TAFE Diploma graduates seeking admission are assigned equivalent TEE aggregates commensurate with their performance and are ranked alongside school leaver applicants. The Faculties practice has been to assign graduates the minimum cut off aggregate for the degree course. In 1987 the minimum aggregate was 330. This practice ensures that TAFE diplomates receive second preference behind school leaver applicants, effectively acting as a filler for the faculty quota. Consideration is only given to applicants who have completed a TAFE Diploma. Partial qualifications and TAFE Certificates are not accepted for entry. Under recently negotiated pilot arrangements applicants with a TAFE background have their records referred to the relevant TED Superintendent for an assessment of their ability to complete the degree.

5.5 Eight TAFE Diplomates, two of whom applied solely on the basis of the TAFE Diploma, were admitted to the Faculty in 1987. This number is a small increase over numbers admitted in previous years. TAFE Diplomates are generally regarded as not having the same level of competency in mathematics and science as the school leavers who are admitted to the Faculty. The Faculty distinguishes between a TAFE Diploma in Electrical or Electronic Engineering and those in other engineering fields on the basis of their mathematics and science curricula. Graduates of TAFE Diploma courses in Electrical and Electronic Engineering must complete Chemical Science Engineering at TAFE or take bridging Chemistry 071 in the first semester of the degree course. Graduates of TAFE Diploma courses in Civil, Mechanical, Production and Structural Engineering are required to complete Mathematics IV Engineering and Chemical Science Engineering. These TAFE bridging units are conducted in a variety of modes to suit student requirements however there are difficulties in viability due to the small number of students involved. TAFE Diplomates seeking admission have been counselled to enrol at adult senior secondary colleges to study year 12 mathematics II & III, physics and chemistry prior to improve their chances of being admitted.

5.6 It is not Faculty policy to grant advanced standing for study in the TAFE Diploma courses. Negotiations between the TED and the Engineering Faculty on admissions and advanced standing have been proceeding for a number of years. They have reached an impasse on the subject of the congruence of the mathematics and science curriculum of the Diploma and degree courses.

Surveying/Cartography

5.7 TAFE graduates form a significant proportion of the intake to the Bachelor of Surveying and Bachelor of Applied Science in Cartography courses offered by the Department of Surveying and Mapping. In 1986 eleven out of forty one new students in Surveying and Mapping were TAFE graduates. TAFE graduates are eligible to enter the courses with either a relevant Diploma or Certificate. Where appropriate the Department raised the aggregate assigned to TAFE graduates by the Admissions Office to ensure applicants received a place.

5.8 Students who enter the course with competence equivalent to year 12 Mathematics I instead of the preferred Mathematics II and III take a different sequence of mathematics units in their first year (Mathematics 104 & 105 instead of Mathematics 101 & 102). They also have the option of taking a fee paying bridging course prior to first semester. The end point competencies are the same for each programme. In the Department's experience students in the Mathematics 104/105 stream do not experience difficulties with the mathematics components in the rest of the degree course relative to students in Mathematics 101/102. In 1986 the Department had arranged a special tuition programme for students who had performed poorly in mathematics and physics units. The programme was very successful and generated a high pass rate.

5.9 The Department maintains a list of standard exemptions in the Surveying and Cartography degree courses for study in the Certificate and Diploma of Surveying and the Diploma in Cartography. The exemptions are revised when either TAFE or Curtin makes alterations to their courses. The current list of exemptions allows around one years advanced standing for applicants with a relevant Diploma. The assessment of exemptions was made by comparing the syilabi of the TAFE courses with those of the Department. The focus was on the level of competency and the Department took the view that any specific deficiencies in knowledge could be remedied in subsequent years of the course.

WA School of Mines

5.10 Seventeen students with TAFE qualifications have entered WA School of Mines' (WASM) courses in the past five years. Seven entered the Associate Diploma in Mining and Mineral Technology and the remainder undertook study at degree level. Decisions on the admission of students are taken by the Heads of Department or the Principal of the School. Two of the TAFE applicants received exemptions in the Associate Diploma and six in the degree programmes. The Heads of Department have the ultimate responsibility for granting students exemptions for previous study. Exemptions are normally granted following an examination of the curriculum and syllabuses relating to the previous course and an interview of the applicant by the Head of Department and colleagues associated with the teaching of various subjects.

The University of Western Australia Admissions Procedures

6.1 A very small number of applicants applying solely on the basis of TAFE qualifications receive places at UWA. UWA admission regulations explicitly recognize standard University entrance examinations such as the TEE and its interstate and overseas equivalents and previous university study or qualifications. Applicants seeking admission on the basis of other qualifications, including TAFE awards, come under the provisions of regulation eight which stipulates that any person of age twenty years may be admitted if they are judged by the Academic Board to be "able to assimilate and benefit from the course to which admission is sought". Within the Faculties the Admissions Committee, which usually includes the Dean and Sub-dean and representatives of the subordinate departments determines selection for admission. The University Admissions Officer and the Chairman of the Matriculation and Admissions Committee are ex-officio members of Faculty Admissions Committees and coordinate admission standards and procedure. The Status Committee determines applications for advanced standing which would involve the applicant entering the second or subsequent year of a degree course.

6.2 Admissions quotas are sub-divided into two groups. Group one consists of school leaver and mature age applicants who have sat their TEE/TAE within the last two years. Group two covers all other applicants including non-matriculated TAFE graduates. Sub-quotas are set for each group in each Faculty and across the University as a whole. TAFE graduates have to compete with a very diverse range of applicants including those with higher education qualifications for places in the group two sub-quota. In 1987 12 percent of the University's overall admission quota was allocated to group two places.

Fine Arts

6.3 In 1987 there were five hundred and thirty two group one and one hundred and fourteen group two student places for the Faculty of Arts. In practice because the Centre of Fine Arts is only one of eighteen Departments offering majors in the Bachelor of Arts degree the number of places open to applicants wishing to study a major in visual arts is small. Group two applicants are ranked by the sub-dean and the faculty admissions committee based on their experience of previous admissions. TAFE graduates are encouraged to sit the alternate test for adult admission (ATAA). Superior performance in the test is seen by the Faculty as being a reliable index of academic ability and therefore as a method of ensuring entry. Twenty seven places in the Faculty of Arts were allocated to this method of entry in 1987.

6.4 Credit transfer in the field of the Visual Arts is complicated by the fact that the Faculty's fine arts major is part of a generalist Bachelor of Arts. It is not possible for a student to specialize in fine arts to the exclusion of other academic disciplines. Students from visual arts courses at Curtin and TAFE are not granted block exemptions on the grounds that they do not have the academic competencies appropriate to a generalist bachelor of arts. Usual practice is to grant exemption for the first year unit Visual Arts 100.

Engineering

6.5 Applicants seeking admission to the Faculty of Engineering with TAFE qualifications and any applicant seeking advanced standing are referred by the Faculty Sub-dean to the respective Head of Department. The decision of the Head of Department is influenced by the demand for places in the Department's course. In Electronic engineering enrolments are high and there is a strong onus on applicants to make a case for advanced standing. Advanced standing is not granted to any applicant who has not completed the first year unit Computing Technology 105. In Civil and Mechanical Engineering enrolments are lower and the situation is more flexible.

6.6 In the experience of the Faculty no student with a TAE aggregate score of less than 350 has ever graduated from the course. In previous years the Department has regarded this score as an absolute rather than relative requirement although the competition for places was such that the lowest aggregate accepted was significantly higher than 350. In 1987 the faculty was required to accept students with an aggregate of less than 350 to fill the Department's quota including an additional ten places allocated to group one entrants.

6.7 TAFE graduates applying for entry are graded with other alternate entry applicants by the Faculty on an evaluation of their academic performance and work experience. If they apply for entry to the second year of the degree their case has to be referred to the Status Committee for a determination. In 1987 there were two hundred and five group one and seven group two student places for admission to the first year of the Engineering degree. The Faculty received and ranked fifty six applications for the seven group two places. Offers were made to three applicants with TAFE qualifications including one from Tasmania.

6.8 One of the principal obstacles to the admission of TAFE graduates is the Faculty's prerequisite of a pass in year 12 Mathematics II and III. TAFE graduates are not regarded as having the necessary mathematics background to complete the course. By decision of the Senate UWA does not provide bridging courses in mathematics and the onus is on the applicant to have the requisite knowledge for the course. In previous years in a small number of exceptional cases TED Heads of Department had been able to negotiate directly with their counterparts at UWA to obtain full credit for the first year of the UWA course for very able TAFE diplomates.

Labour Market Survey

7.1 A survey of the workforce was conducted to obtain indications of the incentives and disincentives relating to cross sector transfer through the perceptions of employers and employees. It was necessary to determine whether people would take up improved educational opportunities for transfer and whether the upgrading of TAFE to degree qualifications would be accommodated in career pathways. The survey sought to determine current occupational structures, promotional pathways and requirements, employment practices, and the career aspirations of employees. Particular attention was paid to the opportunities available for recurrent education. Studies were conducted in both the engineering and visual arts fields and took the form of a representative sample of sixteen organizations, including large public sector organizations, major private engineering firms, several smaller engineering consultancies and a selection of media and graphic design agencies.

7.2 An introductory letter was sent to the participating organizations outlining the objectives of the credit transfer project and asking for their assistance with this survey. Interviews were conducted with representatives of management and a sample number of employees who were selected for their experience in studying for middle level TAFE and degree qualifications. The interviews at management level were designed to gain an overview of the organization, including the occupational structure and any specific characteristics pertaining to education, training or work experience requirements. Patterns of promotional opportunities were ascertained to relate award levels with the occupational structure of the organization. In the employee interviews, the survey canvassed a personal profile of the participants, including the level of secondary education and career aspirations, to gain an understanding of the existing use of, and potential for, credit transfer among the workforce.

Engineering

7.3 There were ten organizations surveyed in the engineering field and the size varied across the sample. The large public and private sector organizations employed thousands of people with large professional and paraprofessional workforces covering a range of fields. These organizations included the Water Authority, the Main Roads Department, the State Energy Commission and Westrail in the public sector and Alcoa of Australia, Western Mining Corporation and Mt Newman Mining Company in the private sector. By contrast the consulting engineering firms had relatively small workforces, mainly staffed by professional engineers with few paraprofessional staff. All the organizations surveyed covered more than one field of engineering, although civil engineering was prominent.

7.4 In the large public sector organizations there was a hierarchical occupational structure with established patterns of promotion from the trades/apprenticeship level, the technician/drafting assistant grade up to the paraprofessional (engineering assistant) level. Progression through these levels was closely related to the acquisition of specific formal qualifications and it was evident that for the great majority of employees promotion peaked at the paraprofessional level. The move from the paraprofessional to professional level was seen by the majority of employees as being almost unattainable and restricted to the atypically career conscious and highly motivated employee prepared to make the considerable sacrifices involved.

7.5 In the large private organizations there was evidence of movement from the trades to supervisor/technical officer level and sometimes up to drafting/engineering assistant level. Unlike the public sector, promotion was not necessarily related to formal qualifications. Qualifications were considered for initial appointment, but subsequently greater importance was placed on performance in the workplace. The small consulting firms did not have any discernable occupational structure below the professional level. From interviews with management in the large private companies it became evident that a certain degree of engineering work was actually done by employees who did not have professional engineering qualifications. However there are indications that this will decrease in the future as competition for employment becomes more intense. The majority of professional engineers are employed as young graduates direct from secondary school/university. This pattern was evident across all sectors of the sample.

7.6 Management in the public sector was aware of highly motivated employees, but conscious of the difficulty facing those employees with a TAFE Diploma seeking to obtain a degree. The limited availability of courses out of working hours and the time required to complete a degree course were seen as major barriers. In the large private sector organizations there was some awareness of the aspirations of the paraprofessional workforce but little evidence of employees upgrading to professional level. Within the smaller private organizations, motivation to continue further studies for advancement was not as evident. There was a tendency for employees to specialize in their own areas with little encouragement for the TAFE Diploma level employee to seek degree qualifications.

7.7 The public sector and the large private sector had similar policies on study leave arrangements. Leave of up to five hours per week might be granted if the commitment was matched in the employee's private time. The reimbursement for books and fees incurred for the successful employee was a feature peculiar to the private sector. The majority of the smaller engineering firms had no definite policy on study leave, with employees needing to do any extra studies in their own time. It was evident that traineeship and cadetship schemes with the public sector were prevalent in the past, but due to financial restrictions only limited opportunities remain. Within the private sector, two organizations fund a scholarship scheme for recruitment.

7.8 All organizations were asked to identify possible changes within the near future that may affect the occupational structure or promotional opportunities for employees. No major changes were anticipated other than increased utilization of computerized technology. The private sector made specific reference to the need for continual training and updating of professional qualifications to keep abreast of the latest developments, and in the public sector the majority indicated that there would be an increase in the ratio of paraprofessional engineers to professional engineers to increase cost efficiency.

7.9 In the employee sample there was a heterogeneity of family backgrounds though a lack of specific encouragement and direction was often cited as having steered some away from full time study. A significant number of those surveyed remained at school till year 12 before deciding on employment and the majority of these commenced work as assistant draftpersons with a few coming across from other disciplines. They had no specific career aspirations and drifted into the workforce for financial reasons before becoming aware of the necessity for study. There were a number of employees in the public sector who began at the trades or apprenticeship level having left school at year 10 and continued with studies later.

7.10 In the public sector promotion is closely related to the level of qualifications. In the large private companies many employees working at the paraprofessional level do not possess TAFE Diploma or Certificate qualifications having instead gained promotion through performance and experience. There are indications that the pressure of employment and increased competition may alter this in the future. While the public sector employees recognize the promotional opportunities up to the paraprofessional level, they are fully aware of the difficulties encountered in pursuing higher degree studies. The TAFE Certificate and Diploma studies undertaken by the employees were all on a part time basis. In the majority of cases respondents commented on the value of combining work and study. A small number of employees did indicate that the study load was too difficult and that full time attendance would have been preferable.

7.11 Employees considered the amount of study leave granted was adequate for TAFE Diploma courses. However for degree studies the time granted was considered unrealistic. Studying part time with some release from work it can take up to 10 years to complete a Bachelor of Engineering course. The alternative was to resign and study on a full time basis knowing that there is no guarantee of employment on completion of the degree. Private sector employees saw incentive for study in increased scope and remuneration although they are not accepted at the professional level without a degree. Nearly all employees in the public sector organizations showed some interest in continuing to degree studies, but many were discouraged due to perceptions of inadequate credit and the length of time needed to complete a degree course. Some employees relied on information from fellow students, but significant numbers had made personal enquiries and therefore had first hand information.

7.12 Only the highly career oriented employee pursues further studies at degree level. In the sample four employees in the public sector and one in the private sector had obtained an engineering degree after graduating with a TAFE Diploma while two were currently studying towards a degree. All commented on the difficulties involved and indicated their preference for full time studies at an earlier stage, should the opportunity have been available. Many individuals commented on the amount of family support required and questioned whether the sacrifice of time and effort was worth the end result. It was difficult to get a clear picture in the private sector due to the small size of the sample. Apart from one employee who did succeed with degree studies, the others did not see the relevance of further higher studies when increased responsibility and good financial rewards were offered for performance and ability.

Visual Arts

7.13 In the visual arts area six organizations were surveyed covering a range of media, graphic design and product design agencies. Workforces varied from the small wholly professional agencies to the larger creative design and manufacturing businesses with a significant number of craft based employees. The media production houses covered a full range of disciplines including production, animation, graphic art, audio visual, photography and sound recording. The smaller agencies concentrated more on creative writing and graphic design. The companies specializing in creative design tended to rely on professional employees while the more general media production work was suitable for TAFE graduates.

7.14 There was little evidence of any formalized occupational structure, promotion was seen more in terms of increased scope and the degree of responsibility given. The majority of agencies employed professional design personnel with degrees and promotion was based on seniority and experience. From the management's perspective there was wide scope for employees to improve their skills and expertise through experience. Management was not aware of a high level of interest in further studies. Remuneration and incentive for employees are linked to performance and responsibility. It is the practice to employ at the professional graduate level unless there are specific requirements in a specialized area. One agency however did prefer to employ the TAFE Certificate or Diploma student and provide them with on going training and experience. The provision of study leave is not that relevant in the visual arts area. In the majority of agencies surveyed employees had already obtained degree qualifications on a full time basis prior to commencing work. The agencies that did employ TAFE students had no specific policy on study leave indicating in house training was more beneficial and that any studies were to be in employees' own time.

7.15 Among those agencies surveyed no major changes were envisaged in occupational requirements in the near future. The natural growth of the industry in Perth will necessitate an increased workforce with increased competition and more emphasis on personal performance. The agencies employing only professional creative design personnel are likely to continue to do so, however one did indicate the possibility of TAFE graduates moving into the more general tasks of finishing artists.

7.16 The sample of employees in the visual arts area was limited as the majority of agencies surveyed employed only graduate personnel who obtained their degree on a full time basis. Of those interviewed all expressed a long standing interest in their particular field but referred to the lack of direction and appropriate advice. Some went on to year 12 and TEE before taking up full time studies and others left secondary school at year 10 or 11 to take up full time TAFE courses. It is significant to note that none of the employees were involved in part time studies, tying in with the agencies policy of no provision for study leave.

All the employees indicated that selection of their particular agency or employer was more a matter of job availability, rather than a particular area of interest. However, they are now aware that the agencies can offer a wide range of experiences and training.

7.17 Employees perceived promotion in terms of increased responsibility gained through high performance and breadth of experience. Job security is good if employees maintain the standard of work required. Employees from all agencies maintained and updated their portfolios as an insurance of their vocational mobility. The TAFE graduates interviewed did not see the need for further study. Most indicated that their studies provided an adequate grounding and that work experience is now all important.

Conclusion

7.18 The survey has shown that occupational structures are more easily defined in the engineering field and in public sector organizations than in the visual arts field and in the private sector. Promotional opportunities in the public sector are related to formal qualifications compared with a focus on performance and experience in the private sector. Evidence of promotion from sub and paraprofessional to professional grades was found mainly in the public sector and restricted to the atypically career orientated individual. Generally advancement leveled off at the paraprofessional level. Encouragement from management to improve educational standing to at least the paraprofessional level was evident in most sectors of the engineering sample. However in the design field the practice is to employ staff with the specific qualifications or ability required.

7.19 The survey produced a different outcome in the engineering and visual arts fields. In the visual arts area there is no specific evidence for the need for cross sector transfer from middle level TAFE to degree courses within the workforce. However this may not rule out the need to make some provision for cross sector transfer for the more able students to proceed directly from a middle level TAFE to a degree course. Conversely the engineering employee survey adduced a high level of interest in higher education. However, the majority of respondents indicated that the lack of part time courses out of working hours, the lack of adequate credit for TAFE qualifications and the length of time needed to complete a degree course were major barriers. There is evidence to suggest that should improvement be made, more employees, in particular those within the public sector, would avail themselves of the opportunities to enhance their promotional standing. This reinforces the recommendations of the Report calling for more flexible provision of professional engineering courses in higher education institutions and the need to grant a higher level of credit for middle level TAFE engineering qualifications. It can be tentatively concluded from the survey that the demand for cross sector transfer will be most evident in vocational fields with a well defined occupational structure involving a hierarchy of skills and expertise. The demand for transfer will be less evident in those fields where the occupational and skills structure is more fluid.

Bardsley and Gallagher Surveys of TAFE Graduates

8.1 For their study Great Expectations: A Study of Cross Sector Transfer from TAFE to Higher Education in Western Australia (1987) Drs Bardsley and Gallagher designed and executed three surveys of different TAFE Diploma graduate populations in WA. These were:

- TAFE Diploma graduates who sought unsuccessfully to enter the 1986 academic year in a WA higher education institution. They included graduates who were not offered a place, those who did not take up a place and those who enrolled but subsequently withdrew or deferred. Thirty three graduates responded to the survey questionnaire out of the target population of sixty five.

- TAFE Diploma graduates who gained entry to the 1986 academic year in a WA higher education institution. Two hundred and forty graduates responded to the survey out of a target population of four hundred and twenty one (this cohort excluded twenty six students with TAFE Certificates or Diplomas who enrolled in the Diploma of Teaching [TAFE] at Curtin University of Technology and those who were offered a place but did not enroll or who subsequently withdrew).

- Students who graduated with a TAFE Diploma in 1985 who did not apply for admission to the 1986 academic year in a higher education institution. Three hundred and twenty eight graduates responded out of the cohort of six hundred and eight six.

8.2 Of these surveys the last was of the greatest relevance to the project in that it canvassed latent demand for higher education among TAFE Diploma graduates. The project had access to responses from the third survey that were sorted by field of study allowing comparisons between the motivations and career patterns of graduates in different areas. Table Five gives information on the size of the survey population in the fields of engineering, surveying/cartography and visual arts. For the purposes of comparision figures are also given on the business field and on the total cohort.

8.3 The survey of the 1985 TAFE Diploma Graduate Cohort who did not apply to enter higher education in 1986 asked graduates a range of questions relating to their motivation and career paths. In most questions graduates were asked to nominate one of a number of set responses, or specify an alternative of their own choice. In others the graduates were asked to nominate a response on a five point continuum from one extreme to the other. The responses in percentages of the respondent group are tabulated for each question. Where many answers were made to a question only the most significant have been shown. Hence for some questions the percentages do not add up to 100 for each respondent group. All figures have been rounded to the nearest whole figure. Observations on the significance of the tabulated responses are detailed below each question. In making comparisons between different fields of study some caution is called for given the smaller numbers involved.

When did you decide to undertake the TAFE Diploma which you finished in 1985?

Response	Total	Eng	Sur/Cart	Vis Arts
During Work	54	48	10	28
After previous TAFE Studies	25	13	10	24
At/After School	15	22	57	16
After starting higher education	6	10	10	8

i. Over half surveying/cartography graduates opted for their course at or after leaving school. Less than quarter of engineering, visual arts or all combined graduates made a decision to proceed to their course directly from or after school.

ii. Around half of engineering and all combined graduates decided to undertake their course while in the workforce.

iii. A significant percentage of graduates in all categories opted for their TAFE course after some experience of higher education.

What was the main reason for undertaking the TAFE Diploma which you finished in 1985?

Response	Total	Eng	Sur/Cart	Vis Arts
Get Promotion	33	22	26	4
Get Training for a Job	18	29	21	10
Personal Interest	28	24	26	70
Improve job prospects	10	20	10	10

i. In terms of motivation there is a similar picture for engineering, surveying/cartography and all combined graduates. Around 45 percent were motivated by a desire to enhance their career prospects and 20-25 percent by a desire to secure initial job training. A further quarter were motivated by personal interest. This contrasts with visual arts graduates were 70 percent enrolled for personal interest.

What is the main benefit for you now you have completed your TAFE Diploma?

Response	Total	Eng	Sur/Cart	Vis Arts
Got a Job	14	19	40	24
Improved career prospects	59	62	55	20
Change career	5	3	5	5
Go higher Education	3	3		4
Personal Interest	12	7		40

i. A minute proportion of graduates rated access to higher education as a beneficial outcome of their course.

ii. A minute proportion rated a change in career as a benefit of completing their course.

iii. 55-60 percent of engineering, surveying/cartography and all combined graduates listed improved career prospects as a benefit of completing the course. Only 20 percent of visual arts graduates did so. Under a quarter of engineering, visual arts and all combined graduates listed getting a job as a benefit compared with 40 percent of surveying/cartography graduates.

iv. Visual arts graduates continued to stress personal interest as a motivating factor with 40 percent listing this as a benefit of their course.

How many job opportunities were open to you after completing your TAFE course?

Response	Eng	Sur/Cart	Vis Arts
Very satisfied	18	37	12
Satisfied	30	12	12
Indifferent	36	25	21
Not satisfied	16	25	35
Most Unsatisfied			21

i. There were significantly less job opportunities for visual arts graduates on completion of their course than was evident for engineering and surveying/cartography graduates. Over half of the former indicated prospects were unsatisfactory compared to a quarter or less for the latter groups.

Do you have a job now?

Response	Eng	Sur/Cart	Vis Arts
Full time	93	100	40
Part time	5		29
No job	2		31

i. 90-100 percent of engineering and surveying/cartography graduates had full time jobs compared with 40 percent of visual arts graduates. Less than five percent of the former group were without work compared to 31 percent of the latter group.

Is your job related to your TAFE Diploma?

Response	Eng	Sur/Cart	Vis Arts
TAFE related	94	100	81
Not TAFE related	4		19

i. A very high proportion of graduates in all three fields indicated their jobs were related to their TAFE courses.

ii. 100 percent of surveying/cartography graduates, around 85 percent of surveying graduates and 32 percent of visual arts graduates had full time jobs related to their TAFE course.

Why did you not apply in 1986 for a place in a higher education institution?

Response	Total	Eng	Sur/Cart	Vis Arts
Career/work first priority	20	17	30	18
Financial or family reasons	20	14	10	22
Unaware of courses/procedures	13	5	5	18
No interest in further study	13	10	10	14
Insufficient credit for study	7	20	10	2

i. Insufficient credit was rated by 20 percent of engineering graduates as a reason for not applying, nearly three times the proportion for all graduates.

ii. 18 percent of visual arts graduates listed lack of information on courses/procedures as a factor, three times the proportion for engineering and surveying/cartography graduates.

iii. 30 percent of surveying/cartography graduates listed work based reasons for not applying, a half again more than other categories of graduates.

iv. Only 10-15 percent of graduates in all categories stated they had no interest in further study.

Do you think that, in the next two or three years, you will apply for a place in a Western Australian higher education institution?

Response	Total	Eng	Sur/Cart	Vis Arts
Yes	33	38	30	32
Unsure	47	45	20	30
No	27	17	50	38

i. Around a third of graduates in all categories indicated they would apply to enter higher education in the next 2-3 years.

ii. Surveying/cartography and visual arts graduates were more definite in stating they would not apply than the general run of graduates.

If you do go on, to which higher education institution would you seek admission?

Response	Total	Eng*	Sur/Cart*	Vis Arts*
WAIT	50	75	67	33
WACAE	14			20
UWA/MU			17	20
Combination of preferences	27	25	17	27

* Only those who answered yes to Q5 were asked to make a response amounting to around one third of the respondents.

i. The distribution reflects the courses available in each field in each institution. It is noteworthy that 20 percent of visual arts graduates listed a preference for UWA.

If you do go on, to which higher education course would you seek admission?

Response	Eng*	Sur/Cart*	Vis Arts*
Business	16	17	
Engineering	74		
Arts/Social Science		17	87
Education			13
Architecture		33	
Surveying		17	
Science		17	

* Only those who answered yes to Q5 were asked to make a response amounting to around one third of the respondents.

i. A high proportion, ranging from two thirds to over eighty percent, of graduates in each category intended staying in the same or a related field.

What will be the main benefit you think you will derive from completing a higher education course?

Response	Total	Eng*	Sur/Cart*	Vis Arts*
Improve Career	50	60	67	14
Change Career	3	5		
Personal fulfillment	12	10		29
Improved Job prospects	10	10		21
New Knowledge	20	5	33	29

* Only those who answered yes to Q5 were asked to make a response amounting to around one third of the respondents.

i. Over 60 percent of engineering, surveying/cartography and all combined graduates listed improved career/job prospects as an anticipated benefit compared with 35 percent of visual arts graduates.

ii. Nearly 60 percent of visual arts graduates listed intrinsic or personal factors as an anticipated benefit compared with 20 to 33 percent for other categories of applicants.

How interested are you in undertaking higher education?

Response	Total	Eng	Sur/Cart	Vis Arts
Very interested	33	30	30	33
Interested	50	32	20	16
Indifferent		19	30	24
Uninterested		12	5	12
No interest		7	15	14

i. Around a third of graduates in all categories stated they were very interested in undertaking study in higher education. However only 50 to 60 percent of graduates in the three vocational categories expressed some interest in higher education compared with over 80 percent of all respondents.

ii. In the three vocational categories between one fifth and one quarter expressed a little interest in higher education.

Academically, how well do you think you can cope with higher education?

Response	Eng	Sur/Cart	Vis Arts
Very well	20	35	39
Well	49	35	43
Indifferent	24	20	12
Poorly	5		2
Very poorly	2	10	4

i. 10 percent or less of graduates in all three vocational fields indicated they would cope poorly with higher education.

ii. 70-80 percent of graduates in all three fields indicated they would cope well with higher education.

In general, were you encouraged or discouraged from seeking to undertake study in higher education by TAFE lecturers or counsellors?

Response	Eng	Sur/Cart	Vis Arts
Highly encouraged	19	15	12
Encouraged	17	10	16
Indifferent	51	75	65
Not encouraged	12		6
No encouragement	2		

i. Around 35 percent of engineering graduates indicated they had received some sort of encouragement from TAFE staff, compared with around 25 percent of surveying/cartography and visual arts graduates.

ii. 18 percent of engineering graduates and 6 percent of visual arts graduates indicated they had received no encouragement from TAFE staff.

How appropriate is your TAFE Diploma course for undertaking higher education?

Response	Eng	Sur/Cart	Vis Arts
Very appropriate	26	28	32
Appropriate	29	50	21
Indifferent	28	11	28
Not appropriate	12	11	13
Very inappropriate	5		6

i. Around 55 percent of engineering and visual arts graduates thought their course was an appropriate basis for entry to higher education compared with 78 percent of surveying/cartography graduates.

ii. Between 10 and 20 percent of graduates in all categories thought their course was an inappropriate basis for entry to higher education.

Are you involved in any other training or further study this year?

Response	Eng	Sur/Cart	Vis Arts
TAFE	39	15	41
External studies	2	5	2
Not involved	60	75	53

i. Around forty percent of engineering and visual arts graduates were pursuing further non-higher education studies in the year following graduation compared with 25 percent of surveying/cartography graduates.

TABLE 5: Target and Respondent Populations for the Bardsley and Gallagher Survey of 1985 TAFE Diploma Graduates Not Applying for Admission to Higher Education in 1986

Study area	1985 Graduates	1986 Applicants	Target Group	Respondents
Engineering	115	8 (7%)	107	60
Surveying/Cartography	37	3 (8%)	34	20
Visual Arts	144	10 (7%)	134	50
Business	304	46 (15%)		
All Graduates	763	77 (10%)	672	328

1. Figures in parenthesis are the percentage of the 1985 TAFE Diploma graduates in that field who applied to enter higher education in 1986.
2. For the purposes of comparison the figures on the business field of study is included.

Source: Published and unpublished information from Great Expectations: A Study of Cross-Sectoral Transfer from TAFE to Higher Education in Western Australia (1987) Bardsley and Gallagher.

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